Conceptualising Customer Relationship Management and Its Impact on Customer Lifetime Value in the Taiwanese Banking Sector

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DEDICATION

This thesis is dedicated to my father in Heaven, my wife and my sons for their unreserved love and support which inspired me to pursue my dream of life.

DECLARATION

I, Chien-Lin Chen, declare that the PhD thesis “Conceptualising Customer Relationship Management and Its Impact on Customer Lifetime Value in the Taiwanese Banking Sector” is no more than 80,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature: _____

Date: _____

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ABSTRACT

A review of the literature revealed that various scholars on the subject of customer relationship management hold divergent views on the exact domain of CRM because of its multi-faceted nature. Furthermore, CRM remains vague in terms of its impact on firm performance because the generative mechanisms have not been fully considered.

In response, a theoretical framework of CRM as the underpinning foundation which establishes the linkages between CRM and the firm's performance is proposed, which synthesizes different perspectives of key constructs of CRM and thus seeks to incorporate them into a practical and coherent framework that can be universally used. Therefore, the central aim of this thesis is to develop an empirically based conceptual model of the process that has the potential for crossing cultural and sectoral boundaries and highlights the potential link between CRM and the establishment of long term customer value. This thesis presents and discusses empirical findings from a survey of 226 senior managers and 584 customers in the Taiwanese banking sector who are examined from their perspectives by using structural equation modeling.

From the perspective of managers, the findings largely supported the proposed hypotheses. Customer interaction and customisation, but not customer knowledge and customer knowledge management (CKM) capability, are significantly and positively related to customer value. CKM capability and customization are crucial in affecting customer satisfaction. The results also provided strong evidence of customer value's impact on customer satisfaction, which in turn is necessary determinant of customer loyalty. Furthermore, the relationship between customer loyalty and CLV is positive.

Consequently, it has been found that customer benefits play significant mediating roles between CRM and firm performance. On the other hand, from the perspective of customers, the results showed that managerial perceptions of CRM practice have no relationships with the customer value and customer satisfaction as perceived by customers.

This thesis contributes to academic and managerial knowledge by providing alternative insights into CRM's influences on the customer's benefits and the firm's performance from a dyadic perspective in one single model. Particularly, the inclusion of customer value and customer satisfaction constructs as key consequences of CRM is suggested to contribute additionally to provide a more complete model of a CRM-performance relationship within the banking setting. Therefore, the framework as a diagnostic tool can be used to identify where specific improvements are needed and where certain aspects of the organizational operations could be improved in CRM for pursuing their competitive advantage and long-term profit.

LIST OF ABBREVIATIONS

RM	Relationship Marketing
CRM	Customer Relationship Management
CLV	Customer Lifetime Value
CKM Capability	Customer Knowledge Management Capability
AMOS	Analysis of Moment Structure
SPSS	Statistical Package for the Social Sciences
SEM	Structural Equation Modeling
AGFI	Adjusted Goodness-of-Fit
CFI	Comparative Fit Index
NFI	Normed Fit Index
GFI	Goodness-of-Fit Index
TLI	Tuker-Lewis Index
IFI	Incremental Fit Index
RFI	Relative Fit Index
RMSEA	Root Mean Square Error of Approximation
RMR	Root Mean Square Residual
PGFI	Parsimony Goodness-of-Fit Index
PNFI	Parsimony-Adjusted Normed Fit Index
CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
MLE	Maximum Likelihood Estimation
CR	Composite Reliability
AVE	Average Variance Extracted
CR	Critical Ratio
DF	Degree of Freedom
SD	Standard Deviation
SE	Standard Error
CM	Customer Management
WTO	World Trade Organization
B-to-B	Business-to-Business
B-to-C	Business-to-Customer

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CHAPTER ONE: INTRODUCTION

1.0 Introduction

Customer relationship management (CRM) has been recognized as a firm's practice to promote cross-functional operations to revitalize its marketing activities for developing and sustaining a profitable customer relationship (Reimann et al., 2010; Richards and Jones, 2008). It covers a set of organizational activities supported by both technology and processes to systematically and effectively manage customer relationships by providing customers with high-quality operations, fulfillment and products and services (Battor and Battor, 2010; Chen et al., 2009; Payne and Frow, 2005; Soliman, 2011). Therefore, a well-developed CRM system can be used to enhance customer benefits and the firm's performance across the different environments (Boulding et al., 2005; Zablah et al., 2004). However, the existing literature does not provide a clear indication of what specifically constitutes CRM. CRM still reflects its complexity of a multi-faceted nature and its influence on the firm's performance is inconclusive because the generative mechanisms through which it enhances performance have not been fully considered (Reimann et al., 2010; Shugan, 2005; Zablah et al., 2004). The possibility of important mediating variables between CRM and the firm's performance potentially exists. Therefore, clarifying further its divergent nature and exploring whether it links directly to the firm's performance or whether this relationship is mediated by customer benefits are needed.

This thesis centres primarily upon exploring the key constructs of CRM that can enhance its best practices and be universally used to create customer benefits and the firm's performance in the banking industry in Taiwan. This research employs three theories - marketing, relationship marketing and CRM - to identify what constitutes CRM and to empirically investigate CRM's effect on the potential performance, e.g. customer value and customer satisfaction as customer benefits, and customer loyalty and customer lifetime value (CLV) as the firm's performance.

In this introductory chapter, the researcher introduces the scope of this thesis that is organized into seven sections. Following it, section 1.1 specifies issues related to the research background and section 1.2 proposes the research problems. The research questions, formulated to achieve the aims of this research, are identified in section 1.3 and section 1.4 delineates the research significance. Section 1.5 introduces the banking industry in Taiwan and section 1.6 discusses CRM in the banking environment. Section 1.7 presents the rationale for the context and section 1.8 describes briefly research methodology. Section 1.9 represents expected research contributions. Finally, the overall structure of the thesis is outlined in section 1.10.

1.1 Research Background

With the increasing complexity of competitions in today's business world, the marketing focus has shifted radically from being "product-centric" to being "customer-centric" (Bose, 2002; Shah et al., 2006; Parvatiyar and Sheth, 2001; Sheth and Sisodia, 1999; Vargo and Lusch, 2008), from mass marketing to customized offering, or one-to-one marketing (Cravens and Piercy, 2009; Peppers and Rogers, 2011)

and from an emphasis on discrete transactions to long-term relationships with superior value creation for customers (Christopher et al., 1991; Gummesson, 2002; Ravald and Grönroos, 1996; Slater and Narver, 2000; Donaldson and O'Toole, 2007; Lusch et al., 2010). That is, a new perspective for marketing has focused on intangible resources (e.g., specialized knowledge and skill of an economic entity that represent potential competitive advantage and can benefit customers), the co-creation of value (e.g., developing customized, competitively compelling value propositions to meet customers' specific needs) and ongoing relationships (Vargo and Lusch, 2004). However, from the perspective of relationship, a long-term relationship with existing customers is beneficial to the firm's profits because acquiring customers is much more expensive than keeping them. According to Goodman et al. (2000), it is from 2 to 20 times as expensive to get a new customer as to retain an existing one. Reichheld and Sasser (1990) posited that firms can increase their profit from 2% to 8% by reducing customer defections by 5%. They further demonstrated that as little as a 5% increase in retention had impacts as high as 95% on the net present value delivered by customers. Because of the economic advantages associated with retaining existing customers as opposed to recruiting new ones, firms are forced to re-establish their customer relationships that centre on delivering superior value beyond that provided by the core products and services to customers by employing CRM (Kotler et al., 2008; Peppers and Rogers, 2011).

Benefits associated with CRM cover the aspects of customer benefits and the firm's performances across the different settings. Customer benefits include the creation of superior customer value, customized offerings to fit customers' needs, reduced risk associated with purchase and enhanced customer satisfaction (Lin et al., 2009; Reimann

et al., 2010; Mithas et al., 2005; Sin et al., 2005; Yao and Khong, 2012). The firm's performances refers to customer retention and loyalty (Chen et al., 2009; Croteau and Li, 2003; Day and Van den Bulte, 2002; Jayachandran et al., 2005), market share, cost reduction, sales growth rate and profitability (Battor and Battor, 2010; Coltman, 2007; Lee et al., 2010; Lancioni et al., 2009; Krasnikov et al., 2009; Reimann et al., 2010; Soliman, 2011; Wang and Feng, 2012) and enterprise competitive power (Fuxian and Yuhui, 2011). These desired CRM's benefits are represented in order to be used as the foundation leading customers to be in relationship with banks in this thesis.

In addition, given that globally the banking industry is facing a strong competitive environment that is forcing it to enhance the sustainability and the development of long-term customer relationships, the question is then - what are the key constructs of CRM that can create better customer benefits which in turn enhance the firm's performances. This question stimulates the researcher to develop a framework of CRM which can be used effectively by the bank to achieve these goals. These goals are progressive from marketing contents with customers, sustaining customer retention and loyalty, improving competences of the bank through CRM progress and ultimately raising the long-term profitability of the bank.

Moreover, the application of an academically developed CRM model would present competitive opportunities to increase firm profits. However, CRM research has been based on a theoretical framework developed in the Western culture and it may not function well when applied in a different context. Culture influences, therefore, should be considered because customer responses are varied between cultures (Davis et al., 2008; Gilbert and Tsao, 2000). Hofstede (1991) emphasised that the cultural differences

have a significant influence on the aspects of marketing and general business practice. Accordingly, it is quite possible that the CRM benefits received, or their implications, may be different when considered in another cultural context, e.g. the banking industry in Taiwan. Bearing this in mind, the purpose here is not to compare the Taiwanese perspective with others. Nevertheless, it aims to simultaneously explore whether a CRM-performance relationship as seen by banks coincides with that perceived by customers, because this has not previously been empirically investigated. The focus of this thesis, therefore, on a dyadic perspective (i.e., the banks and their customers) will contribute to the relevant literature on how Taiwanese customers view their relationships with the banks. It will also provide managers in the banking industry with relevant information and recommendations to improve their CRM practice.

1.2 Research Problem

Though numerous scholars have attempted to develop distinct CRM models in a wide range of contexts, it has been found that CRM reflects a diverse nature and its influence on performance is indefinite (see Day and Van den Bulte, 2002; Croteau and Li, 2003; Yim et al., 2004; Sin et al., 2005; Jayachandran et al., 2005; Mithas et al., 2005; Coltman, 2007; Chen et al., 2009; Reimann et al., 2010; Battor and Battor, 2010; Soliman, 2011; Wang and Feng, 2012). There is no agreement among scholars about the key constructs of CRM that can reflect its best practice and be universally used. In other words, which antecedents, (when they are associated with customer satisfaction and financial performance in one single model), can provide a relatively comprehensive understanding for successful CRM? While there are several potential variables that could be used as antecedents to customer satisfaction that in turn results in financial

performance, these scholars have proposed mixed constructs of CRM as the cornerstone in facilitating customer benefits and the firm's performance. The empirical results also showed mixed CRM effects, with several studies finding positive relationships and others representing insignificant links (see Table 3.1). In addition, in reviewing the indicators of CRM benefits, customer satisfaction and financial performance are the most critical variables in these studies. The former is widely used as the assessment of customer benefit, whereas the latter is relatively viewed as the firm's performance, an ultimate goal of CRM. These academically developed CRM models have been applied across the different contexts and provided a foundation for further developing the critical constructs of CRM. Whereas these empirical results suggested customer satisfaction as a significant consequence of CRM, a number of critical research gaps remain in regard to which other benefits CRM could lead. One of these gaps is a lack of systematic investigation into the CRM's impact on customer value.

Customer value is becoming an area of interest in CRM and relationship marketing (Kotler et al., 2008; Rust et al., 2010). Boulding et al. (2005) and Payne and Frow (2005) argued that the creation of value for customers should be the core of CRM. Any relationship-type marketing attempting to develop customer values is likely to create a stable bonding between firms and customers (Day and Moorman, 2010; Roger, 2010; Slater and Narver, 2000). That is, the more the relationship is enhanced through such a connection, the more committed customers become. Hence, the need for empirical evidence of the antecedents and the consequences of customer value being a key variable has been suggested in previous research. For example, Rust et al. (2010) and Ulaga and Eggert (2006) indicated that when modeling a customer-firm relationship, customer value should be included as a key constituent, as it has been viewed as the

core of customer-firm relationship. Lin et al. (2009) and Wang et al. (2004) provided an important direction for future research to investigate how customer value might affect customer perception about whether they may sacrifice more opportunity costs by consuming the offerings and wish to maintain a relationship with the firm. Although many scholars have attempted to explain the significant role of customer value in CRM, no study was found to have provided empirical evidence to explicitly delineate the relationship between CRM and customer value. This suggests that the linkage between CRM and customer value is another gap in the literature that needs to be further explored. Hence, this thesis proposes an extended CRM framework in which customer value is included not only as the consequence of CRM, but an antecedent to customer satisfaction and customer loyalty, because such connections are important in developing a long-term customer relationship.

Finally, reviewing a CRM-performance relationship in previous studies, the performance indicators, such as customer satisfaction and customer loyalty that are customer-centric, have rarely sought to develop and achieve a dyadic perspective (i.e., the firm's perspective and the customer's perspective) in a single study. Specifically, these indicators were evaluated only from the firm's perspective (e.g., managers' responses to questionnaires), whereas some should preferably be assessed by customers. According to Sin et al. (2005), contrasting CRM's benefits as assessed by internal firm's perspective with those as perceived by external customer's perspective is constructive to reflect the nature of a CRM-performance relationship. This is supported by Nasution and Mavondo (2007), who argued that firms always consciously provide responses to performance questions that make them look good or achieving. As a result, a potential gap does exist in that the previous studies excluded the customer's

perspective. Therefore, there is a need to explore simultaneously whether a CRM-performance relationship as evaluated by firms coincides with those perceived by customers. These questions activate the researcher to advance a cohesive body of knowledge on these topics. Accordingly, the following three questions unfold the research problems in this thesis:

1. What are the key constructs of CRM and its influences on customer value and customer satisfaction as customer benefits to support the realisation of customer loyalty and customer lifetime value as the firm's performance in the CRM-performance relationship?
2. Following from 1, the indicators of CRM performance, such as customer value, customer satisfaction, customer loyalty and CLV, are used as the key measures to monitor the CRM-performance relationship. What are the causal relationships between these outcomes?
3. Does the CRM-performance relationship as seen by firms coincide with those perceived by their customers?

1.3 Aim of Research

The central aim of this thesis is to develop an empirically based conceptual model of the process that has the potential for crossing cultural and sectoral boundaries and highlights the potential link between CRM and the establishment of long term customer value. Specifically, it investigates simultaneously whether a CRM-performance relationship as evaluated by the internal firm's perspective coincides with that perceived by the external customer's perspective, because this has not previously been empirically

investigated.

1.4 Statement of Significance

Although academics and practitioners have paid increasing attention to CRM, a review of the literature revealed that the concept of CRM is still divergent and its linkages with customer benefits and the firm's performance have not been explicitly connected. There is no accepted consensus about these issues. Specifically, few studies have focused on testing CRM model in the banking industry. In response, this research furthers academic understanding by extending and integrating the knowledge of CRM and banking theory and practice. Thus, the proposed research model contributes to CRM theory by identifying CRM's constructs that can reflect its practice in actionable and practical organisational activities conducive to facilitating customer benefits and the firm's performance. That is, this research empirically investigates the relationships between its derived components - CRM's constructs, customer value, customer satisfaction, customer loyalty and CLV - applied to the banking industry in Taiwan. The inclusion of the customer value variable, as a consequence of CRM and an antecedent of customer satisfaction and loyalty, provides an additional contribution in filling a gap of the lack of mediating mechanism between CRM and the firm's performance. Importantly, this research also provides the managers in the banking industry with relevant information and recommendations to assist in identifying areas where specific improvements are needed and to ascertain aspects of the firm's CRM practice that require to be conducted more effectively.

1. 5 The Banking Industry in Taiwan

With the economy's liberalisation and internationalisation, the Taiwanese banking industry experienced dramatic changes. Before 1991, all banks were owned by the government, including the commercial banks, specialized banks, cooperative banks and the financial departments of the general post office. Their establishment, management, interest rates and business scope were all controlled by the government. Within such a monopolistic environment tightly controlled by the government, there was no rush need for these banks to provide high quality services to their customers. However, the liberalization made the government revise the bank law and open its attitude toward the application of new banks. Therefore, in 1991 the Ministry of Finance proved the establishment of 16 privately owned and operated banks. Meanwhile, in the following years, the government relaxed the criteria for establishing new banks, the scope of the bank's business, the number of branches that domestic banks may establish and privatising publicly owned banks. On the other hand, internationalisation resulted in the rising number of foreign banks, the variety of banking services and new sites for branches. These also posed a big threat to domestic banks. However, this reform was helpful to open up the Taiwanese banking industry, create a competitive environment of equal opportunity and enhance the efficient use of financial resources. By the 2000s, private banks had become the backbone of the banking industry in Taiwan.

As a result of the reform and the approval of Taiwan's World Trade Organization (WTO) membership[1] in 2001, it resulted in there being too many banks and branches established in this industry, leading to increasingly intense competition. As the number of banks and branches became excessive, banks started to engage in the cut-throat competition in relation to both price items (e.g., interest rates) and non-price items (e.g., service charges, guarantee fees and so on), resulting in low loan prices, low profits and the inability to compete in the international market. To correct these deficiencies, the Taiwanese government started to modify inappropriate administrative interventions to strengthen financial regulations and also implemented a policy which encouraged some less competitive banks to merge for increasing the size of their operations and their competitiveness. Consequently, with the passage of financial holding-company legislation in 2001, 14 financial holding companies, after consolidation and integration, were generated before 2004. This aimed to achieve the following goals (Lee, 2002):

1. To work out the best benefits of Taiwanese financial industry; increase the scale and scope of finance; fortify professionalization and efficiency; and give flexibility to organization, management and applicants.
2. To elevate the internationalization level and competitiveness of our financial industry.
3. To encourage multi-sector development and emphasize monitor on mergers.
4. To provide operational niche.

[1] There are commitments between Taiwan and World Trade Organization. The details of commitments for the Taiwanese banking include: 1) Acceptance of deposits and other repayable funds from the public, (2) Lending of all types, including consumer credit, mortgage credit, factoring and financing of commercial transaction, 3i) Financial leasing, 4) All payment and money transmission services, including credit, charge and debit cards, travellers cheques and bankers drafts, 5) Guarantees and commitments and 6) Trading for own account or for account of customers, whether on an exchange (Source: Schedule of Specific Commitments World Trade Organisation, 2002).

In addition, it was also the Taiwanese government's hope that one or two of these banks in financial holding companies would become large enough to be ranked among the top 100 banks in the world (Kong, 2005). Accordingly, the government set a target to reduce the number of financial holding company to no more than seven. Due to the intensive competition in a saturated market, Taiwanese banks began to transform themselves into modern banks which enable them to cover a wider range of business to satisfy different needs of customers, e.g. securities transactions, investment management, asset management and insurance business. They also accelerated the development of electronic commerce (EC) for the purpose of providing rapid, low cost and convenient services to their customers. It is obvious that the bank's service in Taiwan still has a lot of space for the improvement to maintain their competitiveness. Particularly, aftermath of global financial crisis 2008-2009, they recognise that the opportunity to keep and develop in their own market depends on whether they can initiate their services, satisfy customers' needs, strengthen the relationship with customers and develop their CRM-oriented EC effectively (Lin., 2009).

Furthermore, on June 29, 2010 the Economic Cooperation Framework Agreement (ECFA) between Taiwan and Mainland China was signed with the aim of reducing tariffs and commercial barriers between them. This was seen as the most important agreement to boost the bilateral trade. Particularly, after the global financial crisis, the Taiwanese banking industry has high expectations for the upcoming changes in the cross-strait financial industry. They are proactive in the development of China's financial market and eager to set up branch offices or invest in Chinese domestic banks. Taiwan has trained many professionals especially in business development and wealth management. Taiwan's professionals are in demand in China's growing financial sector

because they come from Chinese culture and speak the same language (Chen, 2011). Taiwanese banking industry is experiencing huge changes in China's financial industry. Until December 2011, according to the report from Taiwanese Financial Supervisory Commission, there were 37 domestic banks with 3359 branches and 28 foreign banks with 92 branches in Taiwan. Deposits[2] of domestic banks and foreign banks were 24,301 and 483 and loans[3] were 19,248 and 631, individually (see Table 1.1).

Table 1.1 Number, Deposit and Loan of Financial Institutions in Taiwan

Item / Year	Number of Financial Institutions		Deposits		Loans	
	Domestic Banks/ Branches	Foreign Banks/ Branches	Domestic Banks	Foreign Banks	Domestic Banks	Foreign Banks
2003	50(3173)	36(69)	15,391	555	13,131	374
2004	49(3189)	35(67)	16,495	588	14,599	430
2005	45(3239)	36(68)	17,589	588	15,777	486
2006	42(3285)	32(64)	18,367	668	16,056	540
2007	39(3313)	32(83)	18,626	688	16,391	591
2008	37(3264)	32(141)	20,107	886	16,739	680
2009	37(3279)	32(133)	21,758	583	17,078	507
2010	37(3334)	28(92)	23,203	395	18,330	477
2011	37(3359)	28(92)	24,301	483	19,248	631

Note: Numbers in brackets indicate the number of branch offices; Unit: NT$ billion

1.6 Customer Relationship Management in the Banking Environment

For firms in the financial markets, it is important to develop and maintain a superior customer relationship in today's competitive environment, especially in the banking sector where banks are looking at customer lifetime value rather than focusing on discrete transactions. It is evident that the continual relationship between customers and financial service providers are likely to be more stable, not only because of the personal nature of the exchange, but because of the implied switching associated with risk

[2] Deposits include government deposits, checking accounts, passbook deposits and passbook savings deposits.
[3] Loans include short, medium and long term loans, overdrafts, discounts, advances on import and exports etc.

reduction (Gabbott and Hogg, 1998). According to Colgate and Stewart (1998) and Eisingerich and Bell (2007), the lifetime financial requirements of customers and the continual nature of transaction service imply that a relationship approach is appropriate for the banking industry. That is, the financial service providers do have relationship marketing advantages because many customers will wish to form relationships.

Evidence supported that banks with a long-term relationship with customers are likely to produce a steady stream of profits. For instance, Reichheld and Sasser (1990) indicated that an average retail bank retains between 80 and 85 per cent of its depositors, and that even a small improvement in this rate leads to higher margins. Sheth and Parvatiyar (1995) argued that customers who have been with their banks for five years are much profitable than those in the first year of their relationship. Further evidence from Mitchell (1995) revealed that American Express believes a trebling of customer profit is possible by extending customer life cycles by five years. In addition, banks usually use membership relationship as a relationship connector which is beneficial to customer loyalty. However, it is emphasised that banks should recognise that they operate in a high contact business wherein the nature of buyer-seller interactions and the establishment of a long-term relationship based on the confidence and the trust directly influence the retention of existing customers and the recruitment of prospective clients (Ennew and McKechnie, 1998).

Nowadays, the banking industry needs to actively consider how they are perceived by the customers, though most banks are becoming more customer-focused. The banking industry is appropriate for studying CRM because their services are complex, customized and delivered over a continual stream of transactions (Eisingerich and Bell,

2007). That is, it holds a relationship appeal to customers because of the significant characteristics of importance, variability, complexity and involvement (Berry, 1995). The banking industry also has a lead in CRM and the way it serves customers is highly relevant to CRM. Specifically, its transactions are essentially IT-based and contain valuable customer knowledge that is beneficial to make a better relationship connection with customers (Eid, 2007; Peppard, 2000; Ryals and Payne, 2001). CRM has been the hot issue that Taiwanese banks care about the most (Kuo, 2011; Lin et al., 2009; Liu, 2007; Yao and Khong, 2012).

1.7 Rationale for the Context

In according with the research aim, the researcher intends to empirically test the proposed model in a Chinese context in order to examine the external validity of the Western-developed theory. According to Armstrong and Seng (2000), the concept of relationship has been called the Western "Guanxi". Within the banking sector, the Western concepts of relationship may not always apply (So and Speece, 2000). By contrast, a relationship seems to be somewhat tied into Chinese business "Guanxi" where interpersonal relations among critical personnel across organization are the foundation of social ties (Lin and Si, 2010). The "Guanxi" may be instrumental in resource exchange, business relationships, knowledge creation and transfer and product and service innovation (Adler and Kwon, 2002). Accordingly, Taiwan, a representative country of Chinese cultural setting in South-east Asia, has been chosen as the setting of this research.

Taiwan is a country in a Chinese-Commonwealth setting (i.e., Mainland China, Hong Kong, Singapore and Macao) where the Chinese culture is different from the Western cultures. The values and the norms of Taiwanese people highly root in Buddhism and Taoism. Taiwan has a language and cultural advantage in helping multinational firms to invest in the Chinese-Commonwealth market. In addition, Taiwan is one of the fastest-growing economies of the newly industrialised countries and the most powerful players in the global information and communications technology industry. Its economic performance in 2010 surpassed expectation, registering nearly 11% growth and increased by 4.04% in 2011. Unemployment in 2010 dropped to 4.67% from 5.74% a year earlier and got 4.2% in 2011. Taiwan ranked 13th in the World Economic Forum's Global Competitiveness Report 2010-2011 in terms of health, higher education, personnel resources, market efficiency and innovation. Furthermore, according to Standard and Poor sovereign credit rating for 2011, Taiwan was rated at the level of AA, which is better than other Asia countries, indicating that Taiwan has a good financial stability. Under this consideration, the banking industry in Taiwan was selected as the research setting of this thesis.

1.8 Research Methodology

The summary of research methodology is shown in Table 1.2 (see page 19). Data collection was conducted through a quantitative, self-administered questionnaire survey. This approach is significant and widely used to investigate the causal relationships of the underlying theoretical constructs. More importantly, it is an appropriate tool for surveying a large sample as it is easily administered, relatively inexpensive and adequate for these research progresses. This is supported by the research of McCelland

(1994), Sekaran (2000) and Zikmund (2003). With the exception of the demographic questions, the questionnaire with a total of 73 items was divided into eight parts and measured by using five-point Likert type scale to reflect the constructs of interest. These items were mainly adopted from previously valid scales. To ensure that the questions were clearly understood and there was no ambiguity among them, a pre-test was conducted prior to the final survey.

This thesis intends to empirically test the research model from a dyadic perspective at the business-to-customer scenarios in the banking industry. Taiwan, a country in the Chinese commonwealth, has been selected as the setting of this research in order to test the external validity of Western-developed theory and to understand whether different cultural perspectives reflect in the same way. In addition, the sample of this thesis, the senior manager and relational customers of each branch of the selected banks in the seven major cities in Taiwan, was purposively chosen. The senior manager is usually the head manager of each branch and mainly in charge of customer service and marketing. To identify "relational customers", this thesis applied the definition that "relational customers" are the general public who has individual business with a particular bank. The individual business includes a comprehensive saving account, a fixed saving account of more than three years, house mortgage, mutual fund, credit card and one of the direct debt accounts for water, electricity and gas costs. This criterion was chosen based on the discussion with the four top CRM managers of the selected banks. Questionnaires for senior managers were distributed to them by post and completed questionnaires were returned in the same way. Questionnaires for relational customers were given out to them by the front desk staff of banks and completed questionnaires were returned while the customers were served. Using this procedure, a total of 438

senior manager questionnaires and 1040 customer questionnaires were distributed.

In the data analysis, this thesis involved the matched-dyad firm-to-customer pairs and referred to the sampling unit as a "quadrad" recommended by Deshpandé et al. (1993) and Hartline et al. (2000). In order to form a matched dyad for subsequent statistical analysis, the unit of analysis was the paired sample of 1) a senior manager and 2) the average of the responses of relational customers to fit the requirement of a single pair calculation (Hartline et al., 2000). The Statistical Package for the Social Sciences (SPSS) 18.0 was used to analyse descriptive data of the collected sample prior to performing the structural equation modeling (SEM). The SEM was conducted by using AMOS (Analysis of Moment Structures) 18.0 to explore the causal relationships among items and construct and among constructs in the proposed research model. The SEM involves the two-stage analysis approach, the measurement model and the structural model. The measurement model aims to specify the relationships between the observed variables and the latent variables and thus provides reliable and valid constructs. The structural model is to test the hypotheses that reflect the causal relationships between these theoretical constructs. Finally, the overall model fit was assessed by examining the goodness-of-fit indices.

Table 1.2 Summary of Research Methodology

Items	The Scope of Research
Research Type	● Literature review ● Construction of research framework based on theoretic deduction ● Testing empirically research hypotheses and model by SEM
Research Emphasis	The identification of key constructs of CRM and the specification of the CRM-performance relationship from a dyadic perspective in the context of the banking industry in Taiwan.
Research Variables	● Customer knowledge ● Customer knowledge management capability ● Customer interaction ● Customization ● Customer value ● Customer satisfaction ● Customer loyalty ● Customer lifetime value
Theory Base	● Relationship marketing ● Customer relationship management ● Customer value ● Customer satisfaction ● Customer loyalty ● Customer lifetime value
The Object of Empirical Study	The banking industry in Taiwan
Time Construct	Cross-sectional study
Research Instruments	● Theory deduction, logic inference and empirical experience ● Questionnaire survey ● Statistical Package for the Social Sciences (SPSS) ● Analysis of Moment Structures (AMOS)

1.9 Expected research contributions

Theoretical and managerial contributions are expected from this research. For theoretical contributions, the finding will advance current knowledge of CRM theory by adding alternative insight into the identification of CRM's constructs. It will also deepen the understanding of CRM's influence on potential customer benefits and firm performance. Additionally, this research model will be empirically examined in a non-Western context, representing the possible applicability of how CRM theory based on the Western culture can exert its effect in the banking industry in Taiwan. Finally, the research will provide further understanding of the dimensionality and operationalization of the underlying constructs in the research model and their causal relationships from both the bank's and the customer's perspectives.

For managerial contributions, although the desired CRM's benefits have been studied across different contexts, conceptually and empirically, it raises the attention to the applicability of a CRM-performance relationship in the banking industry. By investigating the effectiveness of CRM's role in improving customer benefits and the firm's performance from both the internal bank's perspective and the external customer's perspective, the banks can diagnose the areas where the CRM practice needs to be performed more effectively. In addition, by identifying which construct of CRM is relatively significant to customer benefits, the finding can provide a guideline for effectively allocating organizational resources and also a constructive foundation on which further research on the CRM-performance relationship can be guided and built.

1.10 Structure of the Thesis

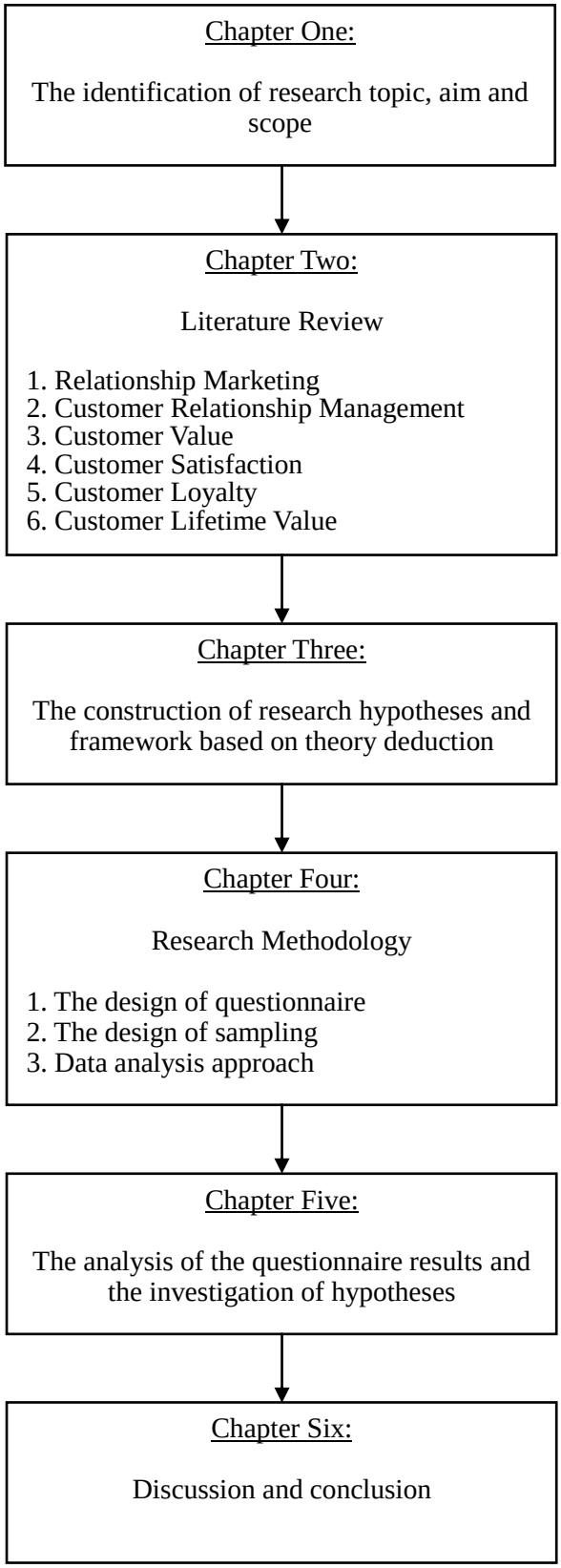
A brief overview of the structure of the thesis is shown in Figure 1.1 (see page 23). First, **Chapter One** introduces the issues related to the research topic and research questions, formulated to achieve the aims of this research, with a brief discussion about the research methodology used. **Chapter Two** provides an overview of the context of the emergence and the content of both relationship marketing and customer relationship management, focusing on their evolution, nature, and common characteristics, to clarify the blurring between them. Also, this chapter critically analyses the literature concerning the inputs to enhance the research model from social media, CRM in business-to-business markets and business-to-customer markets; a critique of past CRM models for identifying CRM's theoretical constructs. In addition, this chapter discusses CRM's influence on customer benefits (i.e., customer value and customer satisfaction) and the firm's performance (i.e., customer loyalty and customer lifetime value). These establish the foundation upon which the underlying constructs were chosen for testing a CRM-performance model.

Based on the literature review in Chapter Two, **Chapter Three** delineates the conceptual framework and the development of hypotheses. Twelve hypotheses are proposed to be empirically investigated. $H_{1a, 1b}$, $H_{2a, 2b}$, $H_{3a, 3b}$ and $H_{4a, 4b}$ are related to the effects of CRM's constructs on customer value and customer satisfaction respectively. H_5 and H_6 demonstrate the influences of customer value on customer satisfaction and customer loyalty individually. H_7 connects the linkage between customer satisfaction and customer loyalty. The final H_8 represents the association between customer loyalty and CLV.

Chapter Four discusses the research methodology that justifies the use of quantitative methods, discusses the development of item scales used to measure the constructs in the research model, describes the instrument of data collection, outlines the pre-test and the final survey, represents the statistical analysis method and finally discusses the reliability and the validity of the constructs. **Chapter Five** deals with the data analysis which includes the sample profile and the testing of the hypothesised model by using the two-stage approach of the structural equation modeling. The first stage aimed to obtain reliable and valid constructs which will be used to examine the twelve hypotheses in the second stage that depict the causal relationships between the underlying constructs in the research model.

Finally, **Chapter Six** interprets the results of the investigation of the twelve hypotheses with the aim of answering the research questions proposed in Chapter One. Theoretical and managerial implications are drawn from the results reported in Chapter Five. Research limitations and possible future research directions are also proposed. Finally, the conclusions of the research findings are presented.

Figure 1.1 The Structure of the Thesis



CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter examines the literature to ascertain the extent of customer relationship management (CRM) that is recognised as good practice in firms to facilitate organisational operations for enhancing customer benefits and firm performances across the different contexts (Boulding et al., 2005; Richards and Jones, 2008). In examining the literature, it was revealed that various scholars (see Table 3.1) on the subject of CRM hold divergent views about its multi-dimensional nature. Furthermore, CRM's role in influencing the effectiveness of marketing remains vague until its key constructs have been identified and operationalized (Sin et al., 2005). These limitations in the literature are seen to exist because of the complexity of its comprehensive nature. Therefore, clarifying the nature of CRM to understand how to effectively exert its practice is best to overcome these limitations.

This chapter is organized into the following sections relating to: the limitations in the preceding paragraph; analysis of the literature concerning the inputs to enhance CRM from relationship marketing, social media, CRM in B-to-B markets and B-to-C markets ; differences between RM and CRM; a critique of past CRM models; customer knowledge; CKM capability; customer interaction; and customization. These inputs have enabled the building of a CRM-performance model developed and applied in this thesis. These established the foundation upon which the underlying constructs were chosen for testing in the proposed theoretical CRM-performance model.

2.1 Relationship Marketing

2.1.1 The Nature of Relationship

According to Webster (1994), the relationship is defined as “a state of affairs existing between those having relations or dealings.” And dictionary.com defines it as “the mutual dealings, connections, or feelings that exist between two parties or people. That is, the relationship implies some sort of intermittent interactions between two or more parties, involving interchanges over an extended period of time (Hinde, 1979). In the business environment, a relationship refers to a specific connection between the seller and the buyer (Gummesson, 1998) and has developed when a customer perceives that a mutual way of thinking exists between customers and suppliers (Grönroos, 2001). So the literature concerning building specific connections between customers and firms are of use for the CRM purposes of creating customer value proposition and increasing customer satisfaction. This, in turn, leads to enhancing customer loyalty and customer lifetime value. According to Peppers and Rogers (2011), the relationships built between customers and firms could be characterised as mutual, iterative, unique, trustful and be driven by interactions with an ongoing benefit to both parties involved. It has been viewed as the invisible threads which can build a unique bond between firms and their customers (Jain et al., 2003). Grönroos (1997) also stated that the latent relationship between buyers and sellers has always existed since humans began trading goods and services. In practice, firms may choose either a relational strategy or a transactional strategy, and customers may want either to have a transactional contact with a firm or become engaged with a firm in a more relational manner. In this regards, Grönroos (1995) proposed the contention “marketing strategy continuum”, which claimed that

relationship marketing (RM) and transactional marketing (TM) are located at the two extreme ends of the marketing strategy continuum. According to Payne (1995) and Palmer (1996), TM focuses on the building of a short-term customer relationship with emphasis on the promotion of products and services and limited customer commitment. That is, it does not emphasize on retaining customers but focuses on a single sale with little emphasis on customer service. Conversely, RM centres on developing a long-term relationship with emphasis on superior customer value delivery, high customer contact and service and retaining customers. In other words, TM is to get new customers, whereas RM intends to get and keep customers by building and maintaining strong relationships (Grönroos, 1995). CRM harnesses the benefits of RM because of the latter's emphasis in retaining customers.

Furthermore, the nature of relationship in marketing, according to Morgan and Hunt (1994), is the so called "relational exchange" instead of "discrete transaction". Relational exchanges means that "commencement trace to previous agreements and exchanges is longer in duration, reflecting an ongoing process", while discrete transaction has a "distinct beginning, short duration and sharp ending by performance" (Dwyer et al., 1987, p. 13). A relationship is not grounded on the product and service, but an interdependent process of continuous interactions and exchanges between at least two parties (Holmlund and Tömroos, 1997). Its core features in business setting, according to Holmlund and Tömroos (1997), are characterized as mutualities, (i.e., degree of mutuality, symmetry, power-dependence structures and resource dependence), long-term characters, (i.e., continuation, strength), process natures, (i.e., exchange, interaction, dynamics and use potential) and context dependence (i.e., embeddedness). The relationship focuses on the in-depth understanding of each counterpart's experience

of individual service encounters between a firm and its customers (Holmlund, 2004).

According to Grönroos (1995), RM is particularly applicable to services marketing, whereas TM is more suitable to customer goods. However, most RM and TM exist simultaneously with different degrees of intensity and characteristics between them, though the paradigm of marketing has transferred from TM to RM (Gummesson, 1994; Gruen, 1995; Grönroos, 1997; Morgan and Hunt, 1994; Sheth and Parvativar, 1995; Möller and Halinen, 2000). It is believed that there are still arguments about the full replacement of RM on TM in the different context. Therefore, it is possible for firms to take RM and TM simultaneously for managing relationships with their customers (Grönroos, 1995), particularly in consumer markets (O'Mally and Tynan, 2000). Nevertheless, RM aims to develop the long-term customer relationship and to enhance the firm's profitability by keeping customers (Sigala, 2006). This is in keeping with CRM's ethos.

2.1.2 Relationship Marketing Perspective and Definition

The development and evolution of RM theory has emerged in the fields of service marketing and industrial marketing for several decades. Although academics and practitioners have proposed numerous definitions in an effort to explain RM, its definitions, contexts and key elements vary considerably and reflect a wide range of perspectives (see Table 2.1). With so many differing views, there is so much confusion about it though it has become a buzzword (Nevin, 1995). As Berry (2002) stated, RM is, at its best, "a philosophy, not just a strategy, a way of thinking about customers, marketing and value creation, not just a set of techniques, tools and tactics (p. 73)".

Indeed, RM is not an easy concept to formulate due to its multi-faceted nature (Egan, 2005). Thus, it could mean different things to different organisations in different contexts (Palmer, 1994), e.g. channel relationships (Anderson and Narus, 1990; Ganesan, 1994), business-to-business marketing (Dwyer et al., 1987; Morgan and Hunt,1994; Wilson, 1995), business-to-customer marketing (Gruen, 1995; Sheth and Parvatiyar, 1995), service marketing (Berry, 1983; Crosby et al., 1990), database marketing (Treacy and Wiersema, 1993), internal marketing (Berry and Parasuraman, 1991), network marketing (Håkansson and Snehota, 1995) and sales management (Smith and Barclay, 1997).

Most scholars agreed that RM was first coined by Berry (1983) in the context of services marketing, and became globally accepted in the 1990s (Grönroos, 1994; Gummeson, 1994; Palmer, 1996). Berry's (1983) study concerned the allocation of organisational resources to strengthen long-term customer relationships, because servicing existing customers is as important to marketing success as acquiring new ones. This is in line with Dwyer et al. (1987), who defined RM as the ongoing relationships of buyer-seller exchanges, not as discrete transactions, and with Grönroos (1990), who argued that the mutual benefits can be derived by maintaining and enhancing on-going relationships with existing customers so that the economic goals of that relationships are achieved. Because long-term relationships are built on the creation of superior value for customers, according to Shani and Chalasani (1992), RM should place great efforts on integrating marketing, customer service and quality to foster a bond with each customer for mutual benefits (Christopher et al., 1991). Similarly, Grönroos (1994) put more emphasis on a movement that marketing has transferred from a narrow sense of transaction exchange to a focus on building long-term value-laden relationships and

marketing networks, which highlights the achievement of customer relationships by mutual exchanges and the fulfillment of promises. Furthermore, Parvatiyar and Sheth (2000) emphasized the cooperative and collaborative relationships to enhance mutual economic value at reduced cost.

From the perspective of keeping long-term relationships, Morgan and Hunt (1994) first considered two important factors influencing RM - trust and commitment, indicating the significance of cooperation and shared values in maintaining the long-term relational exchanges. However, Morgan and Hunt's (1994) perspective of RM has been questioned by Peterson (1995), who argued that if their "definition is literally true, then RM and marketing are redundant terms. One is unnecessary and should be stricken from the literature because having both leads to confusion" (p. 279). A similar criticism from Parvatiyar and Sheth (2000) and Too et al. (2001) indicated that such a view is expansive and controvertible and does not focus on what it actually entailed. In this regard, Harker (1999) concluded that the definition of Grönroos (1994, 1995) is the "best" in terms of its coverage of the underlying conceptualisations of RM and its acceptability through the RM community.

However, although most definitions of RM share a common denominator, there is no agreement on a definition (Grönroos, 1996; O'Mally and Tynan, 2000). Different definitions reflect different stages in the evolution of it as a concept (Harker, 1999). Therefore, there are the debates between academics and practitioners about what it is, when it is appropriate, who should be included in the relationship and when a relationship may exist between the parties (Harwood and Garry, 2006). Additionally, although service firms normally fit for employing a RM strategy (Berry, 1983; Grönroos,

1994), there are no differences of customer relationship between industrial marketing and service marketing (Grönroos, 1994) or business marketing and consumer marketing (Dwyer et al., 1987; Sheth and Paravtiyar, 1995). Nevertheless, research on RM tends to agree that mutual exchanges and the fulfillment of promises, trust and commitment are viewed as integral elements in managing customer relationships and that a relationship is a long-term notion based on repeated interactions between a firm, its customers and its different stakeholders for mutual benefit.

Table 2.1 Perspective of Relationship Marketing

Scholars	Definition	Context	Key elements
Berry (1983, p. 25)	RM is a strategy to attract, maintain and - in multi-service organisations - enhance customer relationships in the service market context.	Service	Attracting, maintaining and enhancing customer
Shani and Chalasani (1992, p. 34)	RM is an integrated effort to identify, maintain and build up a network with individual consumers and to continuously strengthen the network for the mutual benefit of both sides, through interactive, individualized and value-added contacts over a period of time.	Business-to-Customer	Enhancing mutual benefit through individualized and value-added interaction
Morgan and Hunt (1994, p. 22)	RM is about all marketing activities directed toward establishing, developing and maintaining successful relational exchanges which would take place between a firm and supplier, lateral, buyer and internal partnerships.	Business-to-Business	Establishing, developing and maintaining successful relational exchange
Grönroos (1990, p. 138)	RM is to identify, establish, maintain, enhance and commercialize customer relationships with customers and other partners so as the objective of the parties involved are met. This is achieved by a mutual exchange and fulfilment of promises.	Valid to be used in all contexts	Non-customer partnership, mutual exchange and fulfilment of promises
Dwyer et al. (1987, p. 11)	RM is defined in terms of relational exchange as opposed to discrete transaction.	Business-to-consumer	Relational exchange
Palmer (1994, p. 572)	RM is strategies that focus attention on the value of buyer-seller relationships over time.	Marketing education	Mutual value between buyer-seller
Christopher et al. (1991, p. 6)	RM is the integration of customer service quality and marketing, which has the dual focus of getting and keeping customers.	Services	quality, customer service and marketing
O'Malley et al. (1997, p. 542)	RM involves the identification, specification, initiation, maintenance and dissolution of long-term relationships with key customers and other parties, through mutual exchange, fulfilment of promises and adherence to relationship norms in order to satisfy the objectives and enhance the experience of the parties concerned.	Consumer markets	mutual exchange, fulfilment of promises and adherence to relationship norms
Bennett (1996, p. 418)	RM is the organisational development and maintenance of mutually rewarding relationships with customers achieved via the total integration of information and quality management system, service support, business strategy and organisational mission in order to delight the customer and secure profitable lasting business.	Consumer markets	Developing and maintaining rewarding relationships with customers through integrated activities
Harker (1999, p. 14)	An organisation engaged in proactively creating, developing and maintaining committed, interactive and profitable exchanges with selected customers (partners) overtime is engaged in RM."	All contexts	committed, interactive and profitable exchanges with selected partners
Parvatiyar and Sheth (2000, p. 9)	RM is the ongoing process of engaging in cooperative and collaborative activities and programs with immediate and end-user customers to create or enhance mutual economic value at reduced cost.	Business-to-Customer	cooperation and collaboration, mutual economic value
Zineldin (2000, p. 10).	RM focuses on developing close personal relationships, interactions and social exchange between an organisation and its customers and business parties over time to enhance the organisation's competitive response to continually changing markets.	All contexts	close personal relationships, interactions and social exchange
Gummesson (2002, p. 3)	RM is marketing that is based on relationships, networks and interaction.	Network marketing	Networks and interaction
Mazhari1 et al. (2012, p. 82)	Relationship marketing is about a company that is trying to do so as to distinguishing and offering better services to its valuable costumers. It is a continuous process in which organizations try to realize and prepare new values for their customers in which bilateral and mutual interests are considered and these interests are going to be divided with the customer in his period of being as a customer	Business-to-Customer in banking area	Trust, commitment, communication and conflict management
Ghani (2012, p. 46)	Relationship marketing is represented by the behavior components such as trust, commitment, and satisfaction, which help the firm in its effort to foster customer loyalty and to achieve a competitive advantage.	Business-to-Business	Relationship and brand sales

Source: summarized by the author

2.1.3 Relationship Type

The relationship marketing literature has discussed and expanded the business environment into several different relationship types. For example, Christopher et al.'s (1991) six markets model put the customer market the centre of five other markets, i.e. internal, referral, supplier, recruitment and influence markets, for commercial exchange and interaction. Morgan and Hunt (1994) proposed a complete framework of relationship exchange which covers buyer partnerships, supplier partnerships, lateral partnerships and internal partnerships. Gummesson (1994) identified 30 different types of relationships (30Rs) in a given market, including market relationships and non-market relationships which cover all stakeholders both inside and outside the organisation. It is highlighted that the RM view of Christopher et al. (1991) and Gummesson (1994) differs from that of Morgan and Hunt (1994) in that the former centres on customer markets, while the latter favours including other types of markets. However, they shared the common view that relationships are dynamic and evolve and develop as a sequence of interactions that take place between at least two counterparts over time and may cover a very long time span, representing a focus on building long-term relationships in all stakeholders markets.

Additionally, other scholars highlighted the significance of the relationship tie that connects the participants together. For instance, Ford (1990) argued that the links between buyer and seller in B-to-B markets are likely to become institutionalized into a set of roles that each party expects the other to perform, because they can be linked tightly through legal, economic, technological, geographical and time bonds (Palmer, 1996). Such bonds may lead to better customer retention and become more deep-seated

affective relationship construction and maintenance. When tying-in is achieved through mutually rewarding co-operation, mutual dependence and shared risk, the relationship is more likely to be stable and enduring (Holmlund and Tömroos, 1997). While different types of bonds have been identified, the main focus of RM researchers is to examine financial incentives, social and structural bonds[1] as key connectors of relationships to secure customers' loyalty. In this regard, Berry and Parsuraman (1991) and Berry (1995) stated that RM can be practised on one of three levels, depending on the type and number of bonds used to foster customer loyalty. The first level of RM, financial bond, focuses primarily on pricing incentives to secure customers' loyalty and is considered the lowest level, because price can be easily imitated by competitors. The second level relies on the social bond through personalization and customization of the relationship, which is less easily imitated by competitors. The third level centres on structural solution to important customer problems, providing the value-adding benefits of competitive differentiation. The higher the level at which RM is practised, the greater its potential for sustained competitive advantage (Berry, 1995). By providing these relationship bonds, firms can consolidate their customer relationships. By contrast, Cannon and Petreault JR. (1999) and O'Mally and Tynan (2000) focused on the aspects of relationships that reflect the manner in which the two parties interrelated and conducted commercial exchange. These can be characterized by "information exchange", "operational (or procedure) linkages", "legal bonds", "cooperative norms"

[1] The structural dimension of relationships includes activity links, resource ties, connections and institutional bonds; the economic dimension of relationships contains investments and financial adjustments that the partners make for connecting to value creation and especially to profit expectations and mutual gains; the social aspects of relationships reflect the behaviour and perceptions of the people involved in the relationship and thus focus on commitment, trust, atmosphere, attraction and social bonds (Holmlund and Tömroos, 1997, p. 307).

and "adapt by buyers and sellers"[2]. Even if the above scholars studied relationship connectors in different contexts and from different perspectives, they shared the common perspective that partners can be tied together through effective "cooperative norms" to achieve mutual and individual goals, that relationships are also connected by "structural or institutional bonds" that delineate the mutual obligations and roles, that activities, procedures and routines of buying and selling organisations can be linked to facilitate operate, and that relationships are activated by commitment and trust.

2.1.4 Benefits of Relationship Marketing

Relationships, rather than individual orders, sales, projects, products and services, should be an ongoing process and long term and thus be viewed as an important asset for a firm (Ford, 1990; Gummesson, 2004; Parvatiyar and Sheth, 2000). The solution of successful marketing, according to Grönroos (2004), is the relationship itself and how it functions to lead to the creation of superior value and satisfaction for customers. Specifically, RM should involve highly cooperation and collaboration, the development of commitment and trust and the establishment of close bonds between customers and firms (Berry, 1995; Dwyer et al., 1987; Morgan and Hunt, 1994; Palmer, 2000; Parvatiyar and Sheth, 2000).

[2] Information exchange refers to expectations of open sharing of information that may be useful to both parties; operational linkages capture the degree to which the system, procedures and routines of the buying and selling organisations have been linked to facilitate operations; legal bonds are detailed and binding contractual agreements that specify the obligations and roles of both parties in the relationship; cooperative norms reflect expectations the two exchanging parties have about working together to achieve mutual and individual goals jointly; relationship-specific adaptations are investments in adaptations to process, product, or procedures specific to the needs or capabilities of an exchange partner (Cannon and Petreault, 1999, p. 441- 443).

Empirical evidence has established several benefits of RM for both the firms and their customers. For firms, RM benefits include reduced uncertainty, managed dependence, exchange efficiency, social satisfaction and remaining competitive (Berry, 1995; Dwyer et al., 1987; Ford, 1990; Palmer, 1996; Sheth and Parvatiyar, 1995; Sin et al., 2005; Sigala, 2006; Zineldin, 2006). For customers, it can simplify their buying and consuming tasks, simplify information processing, reduce purchasing risk and maintain cognitive consistency and a state of psychological comfort and trust (Holmlund, 2004; Grönroos, 2004; Parvatiyar and Sheth, 2000; Sheth and Parvatiyar, 1995).

This section has explored the nature and the type of RM and discussed the development of RM theory that has benefit for firms and their customers wanting to include RM in the CRM practice.

2.2 Customer Relationship Management

2.2.1 Customer Relationship Management Perspective and Definition

Although CRM has gained much attention from academics and practitioners for several years, there is no universally accepted definition and exact domain of it. As Nevin (1995) pointed out, the term “CRM” has been used to reflect a number of differing themes or perspectives. It was also seen in some scholars’ studies, such as Greenberg (2010), Payne and Frow (2005) and Winer (2001), who described respectively CRM as follows:

> ‘‘[CRM]. . .isn’t a technology. As you will see, that’s true, but not strictly. I also heard that it was a ‘customer facing’ system. That it is a strategy and/or a set of business processes. A methodology. It is all of the above or whichever you choose’’.
> (Greenberg, 2010, p. 4).

> CRM can be defined from three perspectives: narrowly and tactically as a particular technology solution, a wide range of customer-oriented IT and Internet solution and a broadly and strategically holistic approach for managing customer relationship to create shareholder value.
> Payne and Frow (2005, p. 168)

> CRM means different things to different people. For some, CRM means direct e-mail. For others, it is mass customization or developing product that fit individual customers’ needs. For IT consultants, CRM translates into complicated technical jargon related to terms such as OLAP (on-line analytical processing) and CICs (customer interaction centres).
> Winer (2001, p. 91)

As mentioned above, the exact meaning and domain of CRM is varied and reflects diversified perspectives. Although CRM has, implicitly or explicitly, been discussed and conceptualized as a process, strategy, philosophy, capability and technology-based perspective, both the existing academic literature and practical applications of it do not

provide an accepted indication of specifically what constitutes it (Reinartz et al., 2004; Sin et al., 2005; Zablah et al., 2004). CRM might be cited ranging from very narrow interpretations to very broad ones, with no two being the same (Karakostas et al., 2005; Yim et al., 2004). For example, some viewed it as a technology-based database management approach to gather, analyse and apply information about customers to understand and meet their needs and wants. Others regarded it just as call centre, loyalty programs or personalized e-mails. A broader perspective regarded it as an overall mix of process, strategy, philosophy, capability and technology. As a result, the lack of consensus on the meaning of CRM not only impedes academic discourse on this subject, but adds to practitioner skepticism and indecisiveness in establishing it (Yim et al., 2004). Therefore, CRM, like most initiatives, suffer and struggle to survive if it is poorly understood, improperly applied and incorrectly measured and managed (Peppers and Rogers, 2011). On the other hand, while academic research efforts attempted to uncover CRM's role in the effectiveness of customer benefits and the firm's performance, their findings are somewhat inconclusive due to the lack of an accepted operationalization of CRM (Reimann et al., 2010; Sin et al., 2005).

The definitions and the representative descriptions of CRM summarized in Table 2.2 show that CRM is concerned with the aspects of the cross-functional integration and IT-based customer knowledge management capability. Ryals and Knox's (2001) study, for instance, in the context of service sector in UK, summarized core features of CRM as below:

- A customer relationship perspective aimed at the long-term retention of selected customers.

- Gathering and integrating information on customers.
- Use of IT to analyse this information.
- Segmentation by expected customer value.
- Micro-segmentation of markets according to customers' needs and wants.
- Customer value creation through process management.
- Customer value delivery through service tailored to micro-segments, facilitated by detailed, integrated customer profile.

Ryals and Knox (2001) emphasized the significance of integrating marketing and IT to maximize the return on customer information and a considerable degree of cross-functional reorganisation to accelerate and facilitate whole customer knowledge sharing. Payne and Frow (2005) indicated that "CRM is not simply an IT solution; it involves a profound synthesis of strategic vision; an understanding of customer value; the utilization of the appropriate information management and CRM applications; and high-quality operations, fulfilment and service" (p. 168). The emphasis of Ryals and Knox's (2001) and Payne and Frow's (2005) works is that CRM requires the cross-functional integration and IT-based customer knowledge management capability as the foundations to create value for both firms and customers for ensuring the success of a long-term relationship. Sin et al.'s (2005) empirical study, in the context of service firms in Hong Kong's financial industry, conceptualized CRM as a multi-dimensional constructs and demonstrated the substantial association between CRM and business performance, such as marketing and financial performance. Comparatively, Sin et al. (2005) provided an insight into what constitutes CRM and how it can be translated into a comprehensive set of concrete organisational activities conducive to enhancing the firm's performance. However, these scholars view CRM as the overall process of

marketing, sales and service within the organisation to manage a long-term customer relationship through an effective customer knowledge management capability. This is consistent with the perspective of knowledge-enabled CRM proposed by Bose and Sugumaran (2003), Buttle (2010), Gibbert et al. (2002), Gebert et al. (2003), Jayachandran et al. (2005), Sigala (2005) and Wright and Stone (2010).

Therefore, from the perspective of knowledge-enabled CRM, the primary rationale for a firm's existence is the creation, transfer and application of knowledge (Sin et al., 2005). CRM requires a much greater degree of customer knowledge and how it can be employed well within the organization (Jayachandran et al., 2005). Numerous studies summarized in Table 2.2 have shared this fact that CRM is based on the combination of business processes and IT-based knowledge management to anticipate and to respond to customers' needs for creating a long-term customer relationship which leads to firm profits. Similarly, the core themes of Sigala's (2005) knowledge-based CRM are outlined as below:

- An organisation culture that views customer interaction as a learning experience and customer contact as a knowledge-building opportunity and a chance to collect information about customers.
- Knowledge processes capability with a customer-centric IT infrastructure for information accumulation, retrieval and distribution of explicit knowledge throughout the organisation.
- For fostering CKM capability within organisations, senior management support that will motivate employees and team structures to promote the transfer of tacit and explicit knowledge; incentives and rewards to

employees' efforts to capture, use and share knowledge for customizing customer interactions and experiences.

- Collection, analysis and use of information about, for and by customers and creating customer value based on the understanding of customers' needs.

In reviewing the variances among CRM perspectives, Zablah et al. (2004) attempted to provide more conceptual clarity of CRM by synthesizing the review and analysis of process, strategy, philosophy, capability and technology-based CRM perspectives. They reconciled the divergent perspectives of CRM and analysed the core theme of each of five major CRM perspectives as below:

- CRM as process focuses on a firm's ability to detect and respond to evolving customer needs and preferences in order to build durable, profitable, mutually beneficial customer relationship.
- CRM as strategy requires that firms prioritize and maximize valuable customer relationships based on customer lifetime value to a firm which determines the amount and kinds of resources that a firm allocates in a particular relationship.
- CRM as philosophy requires that firms be customer-centric and driven by an understanding of customers' changing needs in order to build and maintain long-term customer relationships based on what customers value.
- CRM as capability requires that firms are able to change their behaviour towards an individual customer based on the knowledge about and from customers. This view reveals that firms must possess a collection of resources to develop knowledge about customers and to apply it to shape

their subsequent interactions with customers.

- CRM as technology requires that firms focus on the development of knowledge and interaction management technology in an attempt to build long-term, profitable customer relationships. This view suggests that firms harness the power of the database, data mining and interactive technology to build customer knowledge and to disseminate the knowledge across the organisation.

In reviewing Zablah et al.'s (2004) study, it is concluded that CRM should be equipped with effective knowledge management capability to understand customers' behaviours and to respond to their needs for maximizing valuable customer relationships regardless CRM is defined in terms of any one of five perspectives. However, Zablah et al. (2004) argued that CRM as a process could provide the best conceptual foundation for the CRM phenomenon, because it explicitly reflects the process aspects of relationship development and maintenance over the course of a lifecycle. In their study knowledge management and interaction management are the major ongoing processes to CRM that involve the development and the leveraging of market intelligence and productively customer interactions for the purpose of building and maintaining a profit-maximizing portfolio of customer relationships.

Consistent with Sigala (2005) and Zablah et al. (2004), Salomann et al.'s (2005) empirical study, in the context of a variety of different industries (banking/financial services are most), in the German-speaking regions, (i.e., Germany, Austria and Switzerland), also highlighted the pivotal role of customer knowledge capability in four key success factors, including strategy, processes, systems and change management, for

implementing knowledge-based CRM.

- Strategy - perceive customer knowledge as a valuable source of product and service innovation and process improvement.
- Processes - align KM activities seamlessly with CRM Processes.
- Systems - create an integrated knowledge repository across organisational boundaries.
- Change Management - encourage relationship managers to capture and disseminate customer knowledge.

As was revealed above, CRM is inextricably linked to customer knowledge capability and is best enabled by it if it could be tightly integrated into all CRM activities. Indeed, this notion has been supported by other scholars, such as Battista and Verhun (2000) and Bose and Sugumaran (2003), who regarded managing customer knowledge capability as the core of CRM, and Xu and Walton (2005), who argued that CRM and customer knowledge management should be linked together in order to maximize operational and strategic efficiency of CRM through effective gaining and sharing customer knowledge, and Croteau and Li (2003) and Jayachandran et al. (2005), who identified KM capability as the critical success factor of CRM that positively affects customer satisfaction and customer loyalty. According to Stringfellow et al. (2004), CRM does well in describing the "whats" of customer behaviour, but falls short of understanding the "whys" for most firms. Consequently, a profound consideration for firms is how to develop sound mechanisms for managing and utilising customer knowledge to facilitate concerted actions within the organisation (Chen et al., 2009; Coltman et al., 2009; Jayachandran et al., 2005; Wang and Feng, 2012).

Finally, Table 2.2 also shows that other studies have identified some key characteristics of CRM, including: 1) the establishment of a customer database, 2) identifying and differentiating customers, 3) the development of relationship programs through customer interaction, loyalty and customization and 4) the development of metrics for measuring CRM performance. These important elements provide a general principle to achieve CRM success, whereas the detailed content of each step is still insufficient.

Table 2.2 Perspectives on Customer Relationship Management

Authors	Main perspective	Definition
Ryals and Payne (2001, p. 3)	CRM requires the cross-functional integration, develops a RM philosophy and utilizes KM ability for managing customer relationship.	CRM is a strategic bridge between IT and marketing strategies and concerned with how organisations manage and improve their relationships with customer for long-term profitability.
Bose (2002, p. 90)	CRM is contingent to firms' ability to respond to evolving customer need and preferences to maintain long-term relationship	CRM means the development and maintenance of long-term relationships with customers, rather than simply a series of discrete transactions.
Parvatiyar and Sheth (2001, p. 5)	CRM requires the cross-functional integration. KM ability determines the key resources firms need to build long-term, customer relationship in CRM.	CRM is a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the company and the customer. It refers to develop full-knowledge about customer behaviour and preferences and to devfeloping programs and strategies that encourage customers to continually enhance their business relationship with the firm.
Payne and Frow (2005, p. 168)	CRM is a strategic level and requires the cross-functional integration and IT-based KM capability to create value for both customers and firms.	CRM is not simply an IT solution; it involves a profound synthesis of strategic vision; an understanding of the nature of customer value in a multichannel environment; the utilization of the appropriate information management and CRM applications; and high-quality operations, fulfilment and service.
Sin et al. (2005, p. 1266)	CRM is a multi-dimensional construct which demonstrates the substantial association with firm performance such as marketing and financial performance.	CRM is viewed as a comprehensive strategy and process that enables an organisation to identify, acquire, retain and nurture profitable customers by building and maintaining long-term relationships with them.
Boulding et al. (2005, p. 157)	CRM is a strategic initiative. The most important element of CRM is for the firm to acquire customer knowledge and then use this knowledge wisely for the dual creation of value which is the core of CRM.	CRM relates to strategy, the management of the dual creation of value, the intelligent use of data and technology, the acquisition of customer knowledge and the diffusion of this knowledge to the appropriate stakeholders, the development of appropriate (long-term) relationships with specific customers and/or customer groups and the integration of processes across the many areas of the firm and across the network of firms that collaborate to generate customer value.
Wayland and Col (1997, p. 45-74)	Firms should be customer-centric and driven by an understanding of customers' needs based on customer knowledge.	CRM means using effectively customer knowledge to achieve customer acquisition, customer development and profitable customer retention, namely, transferring customer knowledge to customer relationship, then transferring into customer profit.
Couldwell (1999, p. 42)	Knowledge-related elements need to be embedded into CRM.	CRM is all about using existing customer information to improve company's advantage.
Bose and Sugumaran (2003, p. 45)	Firms need to integrate CRM function with customer-related knowledge and KM capability.	CRM is about managing customer knowledge and coordinating customer relations across all business functions, points of interaction and audiences to better understand and serve them.
Croteau and Li (2003, p. 22)	Adequate top management support and accurate KM capability with suitable IT infrastructure are critical success factors of CRM initiatives.	CRM is a customer-focused business strategy that aims to increase customer satisfaction and customer loyalty by offering a more responsive and customized service to each customer.
Xu et al. (2002, p. 442)	The characteristics of CRM include sales force automation, customer service and support, field service and marketing automation with multimedia access channels.	CRM is an all-embracing approach, which seamlessly integrates sales, customer service, marketing, field support and other functions that touch customers to keep their most profitable.
Peppers et al. (1999, p. 151)	Customer knowledge management represents the key strategy firms need to build long-term, profitable customer relationship	CRM means being willing and able to change your behaviour toward an individual customer based on what the customer tells you and what else you know about that customer.

Source: summarized by the author

Table 2.2 (Continued)

Blery and Michalakopoulos (2006, p. 117)	Critical success factors for CRM include good project management, a realistic time schedule, perfect programming and not exceeding the predefined budget.	CRM is a strategy and the process of acquiring, retaining and partnering with selective customers to create superior value and build long-lasting relationships for the company and the customer through the right management system and the application of customer-focused strategies.
Karakostas et al. (2005, p. 853)	CRM is driven by the functionality of IT-based KM ability firms implement in an attempt to building customer knowledge and build relationship with customer.	CRM involves the continuous use of refined information about current and potential customers in order to anticipate and respond to their needs and draws on a combination of business processes and IT to discover knowledge about the customers.
Zablah et al. (2004, p. 480)	A firm's capability related to knowledge and interaction management are the major constructs of CRM process for building and sustaining a profit-maximizing portfolio of customer relationships.	CRM is an ongoing process that involves the development and leveraging of customer/market knowledge for the purpose of building and maintaining a profit-maximizing portfolio of customer relationship.
Swift (2000)	CRM is to increase the opportunity by improving the process to communicate with the right customer, providing the right offer, through the right channel, at the right time.	CRM is "an enterprise approach' to understanding and influencing customer behaviour through meaningful communication in order to improve customer acquisition, customer retention, customer loyalty and customer profitability.
Winer (2001, p. 91)	The nature of CRM contains a set of 7 basic components. A database of customer activity and the analyses of the database are the core steps to ensure the success in CRM	For some, CRM means direct e-mails. For others, it is mass customization or developing products that fit individual customers' needs. For IT consultants, CRM translates into complicated technical jargon related to terms such as online analytical processing and customer interaction centres
Kumar and Reinartz (2006, p. 6)	CRM includes call centre management, customer service support, sale force automation and data mining and integrated custome-facing front-end and should focus on customer value.	CRM is the strategic process of selecting the customers a firm can most profitably serve and of shaping the interactions between a company and these customers with the goal of optimizing the current and future value of the customers for the company.
Plakoyiannaki and Tzokas (2002, p. 229)	CRM focuses on creating a corporate culture conducive to customer orientation, learning and innovation, creating customer value, collecting and transforming customer data to aid strategic and operational decision making and appreciating, identifying and nurturing knowledge creation, dissemination and use	CRM is an IT enhanced value process, which identifies, develops, integrates and focuses the various competence of the firm to the "voice" of the customers in order to deliver long-term superior customer value, at a profit, to well identified existing and potential customer segments.
Zikmund et al. (2003, p. 3)	CRM is more technology-oriented and focuses on the effective utilization of customer information with which firms maintain a long-terml relationship with customers.	CRM is a business strategy that uses IT to provide an enterprise with a comprehensive, reliable and integrated view of its customer base so that all processes and customer interactions help maintain and expand mutually beneficial relationships
Karakostas et al. (2005, p. 853)	Integrating CRM data with firm's business processes for use in customer related decision-making and management and developing a customer-centric culture.	CRM is an approach to managing customer related knowledge of increasing strategic significance.
Plessis and Boon (2004, p. 76)	Knowledge management is a prerequisite for CRM and eBusiness. Knowledge management enables CRM through the creation, sharing, harvesting and leveraging of knowledge of an organisation's customers.	CRM is defined as the building and managing of customer relationships on an organisational level through understanding, anticipating and managing of customer needs, based on knowledge gained of the customer, to increase organisational effectiveness and efficiency and thereby increasing profitability.
Richards and Jones (2008, p. 121).	CRM creates seven core benefits on a firm's value equity, brand equity and relationship equity which are components of customer equity.	CRM is defined as a set of business activities supported by both technology and processes that is directed by strategy and is designed to improve business performance in an area of customer management
Reimann et al. (2010, p. 330)	CRM as an organizational capability has the potential to be a source of advantage, which in turn improves firms' positioning and ultimately enhances firm performance.	CRM is defined as a firm's practices to systematically manage its customers to maximize value across the relationship lifecycle.

Source: summarized by the author

2.2.2 Social Media (SM) and CRM

Due to the significance of social media's (SM) influence on engaging customers, recent research has shown a more embedded view of CRM, Social CRM (SCRM) which is the combination of social media[3] and CRM. According to Greenberg (2010), SCRM is a philosophy and a business strategy, supported by a technology platform, business rules, workflow, processes and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment. Woodcock et al.'s (2011) definition of SCRM is: how we …

- Help you engage with us, whenever you need to, wherever you are, in ways that are convenient to you;
- Provide you with the personal experience you need to keep you engaged, informed, interested and maybe even entertained;
- Transact with each other, or through third parties, in ways that are mutually valuable;
- Get to know each other over time so that we can tailor what we do (and how we do it) with you in mind.

SCRM is the connection of social media with the customer database that enables firms to provide new forms of customer insight and relevant context (Woodcock et al., 2011). Although SCRM is an evolution of CRM, it creates new opportunities and more value

[3] SM can be categorised like: blogs, social networking sites (e.g., facebook, twitter and digg), youtube, photo sharing, interactive applications (e.g., mobile apps), location-based networks, discussion group/user forums, communities, review sites and search (e.g., google) (Woodcock et al., 2011, p. 64).

for the development of comprehensive and innovative CRM by developing a social or collaborative context both internally and externally. That is, SM is not just another channel to sell advertisement but offers an opportunity to create engagement and a loyal relationship with customers, because it enables an extremely easy collection of information about and from customers (Pavicic et al., 2011). For firms without sales data, SM enables the brand to extend its personality to engage with consumers, whereas for firms with sales data, SM provides the opportunity for marketers to become personal, to interact with customers spread across geography on a one to one basis for building trust in brands (Woodcock et al., 2011). For instance, the SM relevant to customer relationship has been exemplified in the use of social networking sites, such as the advertising practice of the world's largest social networking web site Facebook and thus is creating a social context for the firm's marketing campaigns to use them as the new platforms for CRM (Pavicic et al., 2011).

Customers matter more than ever before and thus marketers are working in challenging times. To enhance organizational marketing capability, according to Day (2011), firms should forge their relationships with those at the forefront of new media and social networking technologies. Instead of CRM that did not work with any SM platform to widen conversations and relationships with customers, SCRM is characterised as being a more customer-centric process and customer-driven dynamic channel interaction. Thus it enables firms to interact and collaborate with customers and empower customers to shape their own experiences for building close customer relationships, which in turn leads to customer advocates. SM can offer the possibility of seeing what is happening to customer outcomes in real time. It provides the possibility of conducting controlled experiments to find out what delights customers (Denning, 2011). The firm, therefore,

can immediately see what is the nature, intensity and scale of a response to an input on SM, such as Twitter, Facebook, or a blog, to adjust their course (Denning, 2011).

SM can enable firms to engage more in relevant conversations, which go on in user communities (Greenberg, 2010). SCRM will make the user communities accessible to the marketing and enable marketers to listen into what customers are saying, to better understand their needs, their voices and tie it back to actual customer profiles that will help drive real customer centric innovation (Woodcock et al., 2011).

2.2.3 CRM in Business-to-Business Markets versus Business-to-Customer Markets

According to Reinartz et al. (2004) and Boulding et al. (2005), desired CRM benefits do not vary greatly across the different contexts. Indeed, it promotes the realisation of cross-functional activities, i.e. marketing, sales and service, and thus sustains the efforts of marketing to optimize customer benefits and the firm's performance, because it can seamlessly integrate each functional processes, resource deployment processes and learning processes (Dickson et al., 2009).

Examining CRM's performance is becoming an increasingly significant topic in the management area. This section focuses on the understanding of CRM's impact on customer benefits and the firm's performance in an area of customer management in the B-to-B markets or B-to-C markets. These include customer behaviour-based CRM performance, i.e. repurchase, cross buying, and word of mouth (Wang et al., 2004; Lin et al., 2009), customer satisfaction (Mithas et al., 2005; Reimann et al., 2010; Yim et al., 2004), customer retention and customer loyalty (Chen et al., 2009; Croteau and Li, 2003;

Day and Van den Bulte, 2002; Jayachandran et al., 2005) and firm performance, e.g. market share, cost reduction, sales growth rate, profitability (Battor and Battor, 2010; Coltman, 2007; Lee et al., 2010; Lancioni et al., 2009; Krasnikov et al., 2009; Reimann et al., 2010; Sin et al., 2005; Wang and Feng, 2012). In the following sections, the Relationship and CRM's impact in Business-to-Business markets and Business-to-Customer markets is discussed respectively.

2.2.3.1 Relationship in Business-to-Business Markets versus Business-to-Customer Markets

The concept of RM was originally emerging in the fields of service marketing and industrial marketing and focused on the dyadic relationship between buyers and sellers. Although service firms appear to fit the RM condition (Berry, 1983; Grönroos, 1994), there are no differences in customer relationships between industrial marketing and service marketing (Grönroos, 1994). According to Möller and Halinen (2000), as both buyers and sellers in the B-to-C market have several alternatives to choose from, the relationships are more substitutable and rarely develop into strongly interdependent connections. In contrast, B-to-B relationships are characterized by mutual interdependency on idiosyncratic investment in relationship where economic, technological, cooperative norms, social, institutional, resource, knowledge, and adaptation bonds are all viewed as key connectors (Holmlimd and Tömroos, 1997; Cannon and Petreault, 1999; Hollensen, 2003). Accordingly, the relationships are more complex in the B-to-B market than in the B-to-C market (Gruen, 1995; Ford, 1990; Möller and Halinen, 2000). However, managing customer relationship between business marketing and consumer marketing is not significantly distinct (Dwyer et al., 1987;

Sheth and paravtiyar, 1995). RM has been extended to incorporate innovative application in B-to-C markets (Hollensen, 2010). Empirical evidence has revealed that RM enhances both customer trust and commitment, which in turn influence customer behaviours, leading to superior seller performance in both Business-to-Customer and Business-to-Business markets (Palmatier et al., 2009).

2.2.3.2 CRM's impact in Business-to-Business markets

Several studies have identified the aspects of CRM's influence in B-to-B markets. From the perspective of supply chain management (SCM), CRM refers to a management concept that integrates the supplier partner relationship and the customer relationship, through information sharing and resource supply, to maximize customer value and promote enterprise competitive power (Fuxian and Yuhui, 2011). The performance of supply and demand chain can be enhanced by speeding up the information flow to leverage the members' capabilities in facilitating process integration in the chain. For example, Lee et al. (2010) examined how to apply the integration and inclusion of the supply chain to CRM to enhance business performance. They centred the significance of knowledge integration contributed by the supplier and the buyers to maximise the value of the supplier and the buyers. Mithas et al. (2005) evaluated the CRM's impact on customer knowledge and customer satisfaction in the SCM setting. Empirical evidence revealed that CRM improves customer knowledge which leads to improved customer satisfaction. Also, gains in customer knowledge are enhanced when firms are electronically integrated in their supply chain and share their customer-related data, i.e. sales forecasts, marketing plans, sales or campaign results, customer satisfaction and loyalty with their supply chain partners. Heikkila (2002) studied how firms achieve

good customer satisfaction with efficiency in SCM setting through CRM. The result indicated that a good relationship between the customer and the supplier contributes to reliable information flows and reliable demand information flows in turn contribute to high efficiency. Specifically, understanding the customer's situation and need together with the right offering contributes to good co-operation in improving the joint demand chain, which further leads to superior demand chain efficiency and high customer satisfaction. These scholars' viewpoints are consistent with Jüttner et al. (2007), who emphasised the significance of the integration of information needs to obtain knowledge about changes in customer needs as a basis for structural adaption requirement of the supply chain, i.e. timely information on: defined customer segments, new customer and product opportunities, feedback on over and under service delivery. Similarly, Spekman and Carraway (2006) asserted that firms can improve supply-chain planning and integration through CRM. From the above scholars' perspectives, CRM studies on SCM emphasised the significance of the flow of information between buyers and suppliers in the supply and demand chain environment, particularly with the focus of sharing information to fit customers' needs.

Also, numerous studies have examined the impact of CRM on firms in the general setting of B-to-B markets. Day and Van den Bulte (2002) identified customer relating capability as three interrelated capabilities comprising orientation capability, information capability and configuration capability. The findings stated that a superior customer relating capability has a strong relationship with relative sales, profitability and customer retention performance. Croteau and Li (2003) discussed the critical success factors of CRM technological initiative realised by 57 large firms in five industries in Canada with their impacts on customer satisfaction and loyalty. The

finding identified knowledge management capabilities based advanced IT as the most significant factor influencing the performances of internal focus (i.e., customer satisfaction) and external focus (i.e., customer loyalty). In a study of managers and businesses in Hong Kong, Sin et al. (2005) identified four key constructs in CRM effectiveness as key customer focus, a cross-functional CRM organisation, knowledge management and technology-based CRM, which are critical success factors for business performance. Jayachandran et al. (2005) explored the role of the relational information process and technology use in CRM in 172 firms from various industries in B-to-B and B-to-C markets in U.S. The results emphasised that relational information processes in CRM play a vital role in enhancing an organization's customer relationship performance (i.e., customer satisfaction).

2.2.3.3 CRM's impact in Business-to-Customer markets

Numerous studies investigated CRM's impact on customer focus, mostly indicated by customer value, customer satisfaction and customer loyalty. Thomas and Sullivan (2005) illuminated that in CRM the firms obtain customer knowledge through coordinating and integrating data from multi-channels sources to understand and predict its customers' channel choices, and thus enhance efficiency in marketing expenditures and create superior customer value. Wang et al. (2004) and Lin et al. (2009) examined the role of key dimensions of customer value and their differentiated effects on customer behaviour based CRM performance from the customer's viewpoint of two individual service firms in China and in Taiwan individually. Their findings revealed the core role of customer value in CRM and provided the direction of future research for exploring other dimensions of customer value and other factors that affect it in different CRM

performance measures. Reinartz et al. (2004) connected CRM process and business performance measured by both perceptual (i.e., overall performance, market share and growth) and objective economic performance (i.e., return on assets) across four industries and three countries. The results revealed mixed support for CRM's impact on perceptual performance and even less support for objective performance across the three relationship stages, i.e. initiation, maintenance and termination.

2.2.3.4 CRM's impact across B-to-B markets and B-to-C markets

Several CRM studies were investigated in the contexts of both B-to-B markets and B-to-C markets. Soliman (2011) explored the theoretical foundations of CRM and their relationship to the marketing performance. Focus on main customers, the organisation efficiency and customer knowledge management are identified as important elements of CRM that relate to marketing performance, e.g. preserving current customer, attracting new customers, increasing the market share and the standard of sales growth. Battor and Battor (2010) investigated the impact of CRM capability on innovation and business performance measured by market and financial performance. The results supported the direct impact of CRM on performance and that developing close relationships with customers enhances a firm's ability to innovate. Krasnikov et al. (2009) examined the impact of CRM on two metrics of firm's performance, operational cost efficiency and the ability of firms to generate profits efficiency, by using a large sample of U.S. commercial banks. They found that CRM was associated with a decline in cost efficiency but an increase in profit efficiency. Coltman (2007) and Wang and Feng (2012) focused on the identification of CRM capability and its relationship with firm's performance from various industries. Their findings revealed that a superior CRM

capability could deliver improved performance outcomes, e.g. customer retention, sales growth, market share and cost reduction. Similarly, Jarratt's (2004) exploratory study proposed a relationship management capability concept (i.e., relationship infrastructure capability, relationship learning capability and relationship behavioural capability) and provided the future research direction for confirming the strength of its impact on relationship, market and financial performance outcomes. Chen et al.'s (2009) study measured the key constructs of CRM effectiveness and their effects on customer loyalty from various industries, mainly financial services institutions and manufacturing companies in Taiwan. The results supported three dimensions (i.e., relationship marketing, customer-focused information technology and customer-focused organisational climate) as practical measures for evaluating CRM effectiveness and its positive associations with customer loyalty. Others paid their attention to different business settings, such as the education service industry. Furthermore, Payne and Frow's (2005) strategic framework of CRM emphasized the role of CRM in achieving value for customers, shareholders and employees and reducing costs. They mentioned that customer satisfaction and customer retention have been achieved in 36% and 51% of the firm respectively as the firm applied CRM. Zablah et al. (2004) clarified the nature of CRM and built a comprehensive framework to aid marketers to achieve CRM success. The results showed that perceiving customer relationship as a continuous process helped to maintain a profit-maximizing portfolio.

Finally, other scholars centred their CRM research on facilitating the development of customer relationship based on a firm's marketing effectiveness (Chen and Ching, 2004; Jones et al., 2005; Kotler et al., 2008; Kotha, 1995; Peelen, 2005; Leigh and Tanner, 2004; Thomas et al., 2004; Tanner et al., 2005; Lin et al., 2010; Liang and Wang, 2005;

Soliman, 2011; Sigala, 2005). For instance, Soliman (2011) proposed important elements of CRM that relate to marketing performance, such as preserving current and attracting new customers, increasing the market share, enhancing the customer's satisfaction, increasing the standard of sales growth and adding the net profit standard to sales. Richards and Jones (2008) summarised seven core abilities of CRM which benefit both the revenue generation (e.g., improved sales performance) and cost saving (e.g., integrated across channels).

As Woodcock et al. (2000) stated, firms that manage customers well using sensible, observable, and well-implemented business practice are very likely to produce a good business performance. Conversely, firms that do not set up good customer management practices are very likely to be poor in business performance. The benefits associated with CRM do exist across the different contexts.

2.3 Blurring between RM and CRM

Although the definitions of RM and CRM differ, the core theme of them is its focus on making a shift from customer acquisition to customer retention, the creation and the delivery of superior customer value, a cooperative and collaborative relationship between the firm and its customers and other marketing actors, that these relationships are longitudinal in nature and that both parties in the relationship benefit (Peterson, 1995; Parvatiyar and Sheth, 2001; Ryals and Payne, 2001; Christopher et al., 2002). CRM, though originating from the conceptual and theoretical foundation of RM, has served as a practical application of RM for firms to improve efficiency and effectiveness of marketing in enhancing mutual value for both parties involved (Chen and Popovich,

2003; Gummesson, 2002; Parvatiyar and sheth, 2001; Richards and Jones, 2008; Plakoyiannaki and Tzokas, 2002). It can be viewed as an IT extension of RM with management theory and approach (Bonnemaizon et al., 2007; Gummesson, 2002; Zineldin, 2000). Therefore, without process management encompassed by CRM, RM on a company wide scale is not effective (Brink and Berndt, 2009; Chen et al., 2009). From a firm's perspective, both RM and CRM concepts can be viewed as organisational values that put customer relationship at the centre of the firm's strategic and operational thinking (Bose and Sugumaran, 2003). And, it is sustained superior customer value that enables firms to build a long-term relationship with customers (Christopher et al., 1993; Morgan and Hunt, 1994). However, RM is termed CRM when it emphasizes the customer market in particular (Gummesson, 2002; Lindgreen and Antioco, 2005). Therefore, the expression of CRM is becoming standard terminology, replacing what is widely perceived to be a misleadingly narrow term, RM (Buttle, 2010).

In spite of the commonalities described above, several differences between CRM and RM do exist: First, RM focuses on strategically managing relationships with stakeholders (Ryals and Payne, 2001), such as investors, suppliers, competitors, internal employees, clients, customers, government and nonprofit organisation (Morgan and Hunt, 1994; Parvatiyar and Sheth, 1994; Tzokas and Saren, 1999). CRM is more dedicated to building relationships with valuable customers to maximize the customer value by satisfying and retaining them (Gummesson, 2002; Ryals and Payne, 2001). Second, CRM is more a knowledge-enabled strategy and involves the capability of managing customer knowledge to improve customer benefits and firm profitability (Ryals and Payne, 2001; Bose and Sugumaran, 2003; Bueren et al., 2005; Boulding et al., 2005; Gebert et al., 2003; Lesser et al., 2000; Garcia-Nurillo and Annabi, 2002;

Nasution and Mavondo, 2007; Mithas et al., 2005; Wang and Feng, 2012). Third, RM's nature is relatively associated with high-level strategic thinking and lacks concretely operational contents (Gummesson, 1994). Thus, RM needs a holistic view of business process management connected to it (Gebert et al., 2003), whilst CRM is used in a more tactical sense (Parvatiyar and Sheth, 2000; Ryals and Payne, 2001) and represents an organisational capability that is underpinned by a broad range of business practices, i.e. technological, organizational and human capabilities (Coltman et al., 2009; Chen et al., 2009; Reimann et al., 2010). Fourthly, RM focuses only on the tasks needed to build and sustain relational exchanges, while CRM is concerned with the development and maintenance of a portfolio of profit-maximizing customer relationships that is likely to include exchange relationships that vary along the transactional-relational continuum (Zablah et al., 2004). Finally, RM is relatively more emotional and behavioural, focusing on such variables as bonding, empathy, reciprocity and trust (Yau et al., 2000), while CRM is more managerial and focuses on how management can make concerted efforts in attracting, maintaining and enhancing customer relationships (Sin et al., 2005).

However, Barnes and Howlett (1998) argued that academics and practitioners should consider the relationship between the firms and their customers from the customers' perspective because the relationship may not be formed with all customers. When customers do not want to keep a relationship with firms, the term customer management (CM) is more suitable and holistic than some of the definitions of RM and CRM (Woodcock et al., 2000). CM is about finding the right customers, getting to know them, growing their value and retaining their business in the most efficient and effective way (Woodcock et al., 2000). Its emphasis is to manage all customer interactions to

enhancing customers' experiences during each stage of the customer life cycle.

2.4 Review and Critique of Past CRM Models

This section presents the results of an attempt to review and critique of the past CRM models with the aim of establishing an accepted agreement of the key constructs of CRM which is used as the foundation of the proposed research framework and can be employed universally as an organisational capability to practically enhance customer benefits and the firm's performance. Section 2.4.1 reviews the past CRM models in previous studies and the critique is presented in section 2.4.2. Finally, the key constructs of CRM used as the foundation of the proposed research model in this thesis are discussed in section 2.4.3.

2.4.1 Review of Past CRM Models

Although there has been increasingly heightened focus and attention on CRM by academics and practitioners, the definitions and descriptions of CRM that researchers used are quite varied. This results in many divergent perspectives on the meaning and exact domain of it, indicating inconsistency in what constitutes it. In the following previous studies, as shown in Table 2.3, proposing specific aspects of CRM's constructs and its impact on customer benefits and the firm's performance are introduced. This section will conduct review and critique of these models with the aim of examining the variety of variables used and then identifies the key constructs of CRM that could capture the nature of its best practice conducive to customer benefits and the firm's performance.

First, this thesis focuses on Peppers and Rogers (2011), who argued that CRM can be viewed as a series of steps, including: 1) identifying a detailed view of individual customers, 2) differentiating the customers with regards to their values and needs, 3) interacting with an individual customer efficiently and effectively and 4) customizing the firm's products and services to fit each individual customer's needs. Peppers and Rogers (2011) proposed a detailed guide and evaluation for firms to monitor their CRM activities. "Identifying and differentiating customers" are largely "customer analysis" steps, whereas "interacting with customers and customizing products and services" are external "action" steps visible to the customers. The focus of their perspective is that firms need to change their behaviour toward an individual customer based on what customers say and what firms know about customers for increasing the value of customer base. This also means that customer knowledge management (CKM) capability should be viewed as the foundation and core theme of organizational CRM so that firms can treat differently individual customers, effectively interact with customers and customise offerings. This is consistent with Zablah et al. (2004), who stated that long-term, profitable relationships result only when firms are able to continually adapt their behaviour towards individual customers' needs. Disappointingly, although Peppers and Rogers (2011) emphasized the significance of CKM capability to identify, differentiate and target customers in all CRM activities, they paid less attention to the content of the conceptualisation of CKM capability to help achieve CRM goals. Nevertheless, they provided a list of general guides and practices designed for firms to foster a long-term relationship with customers.

Another similar view was taken by Swift (2001), who presented a recyclable process of CRM comprising knowledge discovery, market planning, customer interaction and

analysis and refinement. Swift (2001) focused on the development of the capability of sustained learning and generation of customer knowledge for efficient marketing planning, i.e. product, marketing and communication planning, and customer interactive channels. By contrast, Winer (2001) illustrated a relatively comprehensive perspective of CRM and identified six key elements of CRM, including: 1) customer database activity, 2) analyses of the database, 3) given the analyses, decision and tool about for targeting customers, 4) relationship programs, 5) privacy issues and 6) metrics for measuring the success of the CRM program. In the following are the emphases of Winer's (2001) work.

- The construction and analyses of customer databases are the foundation of CRM activity so that firms can make appropriate decisions to target customers. To reach this achievement, CKM capability should be embedded in CRM activities. This notion is in line with Peppers and Rogers (2011) and Swift (2001). Also, Winer (2001) has identified customer information about transactions, customer contacts, descriptive information and response to marketing as basic elements of the customer database.
- Targeting customers depends upon segment factors, e.g. highest purchasing rates, greatest brand loyalty, which are highly related to the development of organisational CKM capability.
- Conducting relationship programs (i.e., customer service, frequency and loyalty programs, customization, rewards programs and community building) to deliver a higher level of customer satisfaction than competing firms deliver.
- Measures of CRM performance, such as customer conversion rates and

loyalty that are customer-centric, should be developed and measured to monitor how CRM is working.

Winer (2001) indicated that customer information and CKM capability should be embedded as the foundation of CRM. Also, Winer (2001) emphasised relationship programs as a major element of a CRM model, i.e. loyalty programs and customization, to enhance customer satisfaction and CRM performance. In the customer relationship program customization has been deemed to have a pivotal role in making the firm's offerings more flexible in meeting individual customers' needs. Disappointingly, Winer (2001) did not place much attention on how CKM capability and customization can be to be developed and managed well in CRM. Also, Payne and Frow (2005) indicated that Winer's (2001) model, though useful, is not a cross-functional process-based conceptualization.

Similarly, Körner and Zimmermann (2000) illustrated five theoretical constructs of CRM, including customer interaction, virtual communities, trust, value added and customer profiling with two internal organisational management mechanisms comprising process and control, to improve the effectiveness and efficiency of CRM. These constructs complement each other both horizontally between the measure blocks and vertically within the measure blocks. In Körner and Zimmermann's (2000) model there are some concepts similar to preceding scholars' views. These key points can be separated for discussion purposes into three parts as below:

- Detailed customer profiles facilitate precise matching of marketing offers to customers, track the effectiveness of marketing programs and provide the

basis for future planning. Customer profiling refers to the collection and analysis of the customer data in order to generate appropriate marketing activities to optimise fit with customers' demands.

- Customer interaction centres on the contents of communication and the offered communication channels to create added value for the customer. This is consistent with the notion of "a multi-channel integration process" proposed by Payne and Frow (2004, 2005), who emphasized providing appropriate combinations of channels to create positive customer experiences, and with Peppers and Rogers (2011), who argued that automated and less costly communication channels can provide firms with opportunities to relay marketing messages and sales with customers.
- All measure blocks (i.e., customer interaction, virtual communities, trust, value added for the customer and customer profiling) described in the model need to be operated and monitored through the mechanism of "processes" and "controlling" in order to be performed as planned. The "processes" are to organize and integrate internal and external relative processes to function each measures block. The nature of "controlling" is in accord with "metrics" for measuring customer relationship performance presented by Croteau and Li (2003), Payne and Frow (2005), Minna and Aino (2005), Julta et al., (2001) and Winer (2001), who viewed individually customer value, satisfaction, loyalty and firm profitability as performance indicators. In addition, the significance of cross section function was highlighted in both "processes" and "controlling".

Compared with preceding models, there was increasing attention on the role of CKM capability in CRM in Stringfellow et al.'s (2004) and Sigala's (2005) studies. Stringfellow et al. (2004) asserted that the essence of CRM success is grounded on the capability of leveraging customer knowledge to understand customers' need which helps firms improve the efficiency and the effectiveness in marketing plan. They proposed the alignment of three building blocks for CRM success: insight into customer decision-making, information about customers and information-processing capability. In their view, all customer decision-making should be based on information-processing capability and information about customers, i.e. customer demographics and customer history, profitability information, functional needs and emotional needs information. Disappointingly, they paid less attention to the development of measures of information-processing capability and information about customers. They specified their real impacts on CRM performance. Similarly, Sigala (2005) identified the alignment of three managerial processes for CRM: ICT management, knowledge management and relationship management, internal and external. He focused on the enhancement of organisational knowledge management capability, such as 1) the creation of a culture of trust to foster cross-functional collaboration and to share expertise and creation of new knowledge and 2) the development of information and communication technology (ICT) for gathering, storing, disseminating and accessing customer information across the organisation. In this regard, several other scholars (Bose, 2004; Campbell, 2003; Davenport and Prusak, 1997; Minna and Aino, 2005; Quintas et al., 1997; Croteau and Li, 2003; Lin et al., 2010; Sin et al., 2005; Soliman, 2011; Wang and Feng, 2012) also have demonstrated critical viewpoints on organisational culture, structure and technology infrastructure to enhance knowledge management capability in the scope of CRM.

Compared with the scholars mentioned, Wells et al. (1999) placed more emphases on the notion of one-to-one marketing of obtaining and maintaining a share of each customer rather than a share of the entire market. Three key elements in their model are described briefly as below:

- Integrating customer data across the organisation and expanding the customer data profile to include non-transactional data. Information about and from customers were proposed while information for customer was not. Disappointingly, the operational content of information about and from customers still remains ambiguous.
- Emphasizing IT enabled customer interaction to enhance customer relationship. They focus on the one-to-one relationship by using IT assisted and automated interaction. This is consistent with the perspective of Körner and Zimmermann (2000), Peppers and Rogers (2011) and Payne and Frow (2004, 2005). Disappointingly, Wells et al. (1999) did not explore the conceptualisation of customer interaction to foster a positive impact on the long-term relationship.
- Enabling internal and external transmission of organisational information for the purpose of decision support and enhancing the interaction process to improve customer service. This is similar to the notion of CKM capability in scholars' studies (Campbell, 2003; Minna and Aino, 2005; Quintas et al., 1997; Croteau and Li, 2003; Soliman, 2011; Wang and Feng, 2012), that the mobility of customer knowledge inside and outside the organisation is highly related to the organisational structure, culture and technology use.

In addition, Payne and Frow's (2005) CRM strategy framework (see Figure 2.1), in the context of large enterprises in both the B-to-B and B-to-C sections in UK, viewed CRM as a holistic approach that CRM is not simply an IT solution, but involves a profound synthesis of strategic elements. They positioned it a strategic-level which commences with a detailed organisational strategy, business and customer strategy, and concludes with an improvement in business performance through the cross-functional integration, the multi-channel interaction and IT-based KM capability with the aim of creating value for both firms and customers. The key nature of five cross-functional processes in their CRM model is concisely discussed as below:

- Strategy development process focuses on a detailed assessment of business strategy and the development of customer strategy. Organisational business strategy is developed on a basis of a firm's vision and the industry and competitive environment, while customer strategy focuses on identifying profitable customers.
- The core process of CRM is a value creation process which involves three key elements: 1) the value customers receive from firms, 2) the value firms receive from customers and 3) maximizing CLV through value exchange with co-creation or co-production. This core notion is similar to Boulding et al.'s (2005) view that "the core of CRM is the concept of dual creation of value" (p. 159).
- The multi-channels customer interaction focuses on the selection of communication channels to provide customers with positive interaction experience. Interaction channels include physical contact, i.e. sales force, outlets, telephony and virtual contact, i.e. e-commerce, m-commerce

(Donaldson, 2007; Payne and Flow, 2004).

- The information management process refers to the collection, collation and use of customer data and information to generate customer insight and marketing responses. The key elements include data repository, IT systems, analysis tools and front and back office applications. Here, information management process centres on the field of knowledge processes capability instead of knowledge infrastructure capability, such as organisational structure, culture and senior management support and reward system (Bose, 2004; Campbell, 2003; Davenport and Prusak, 1997; Gold et al., 2001; Minna and Aino, 2005; Quintas et al., 1997).
- The performance assessment process refers to the creation of value for all stakeholders, i.e. employer, customer and shareholder, and performance monitoring. Unfortunately, the measures of performance assessment were not discussed in detail.

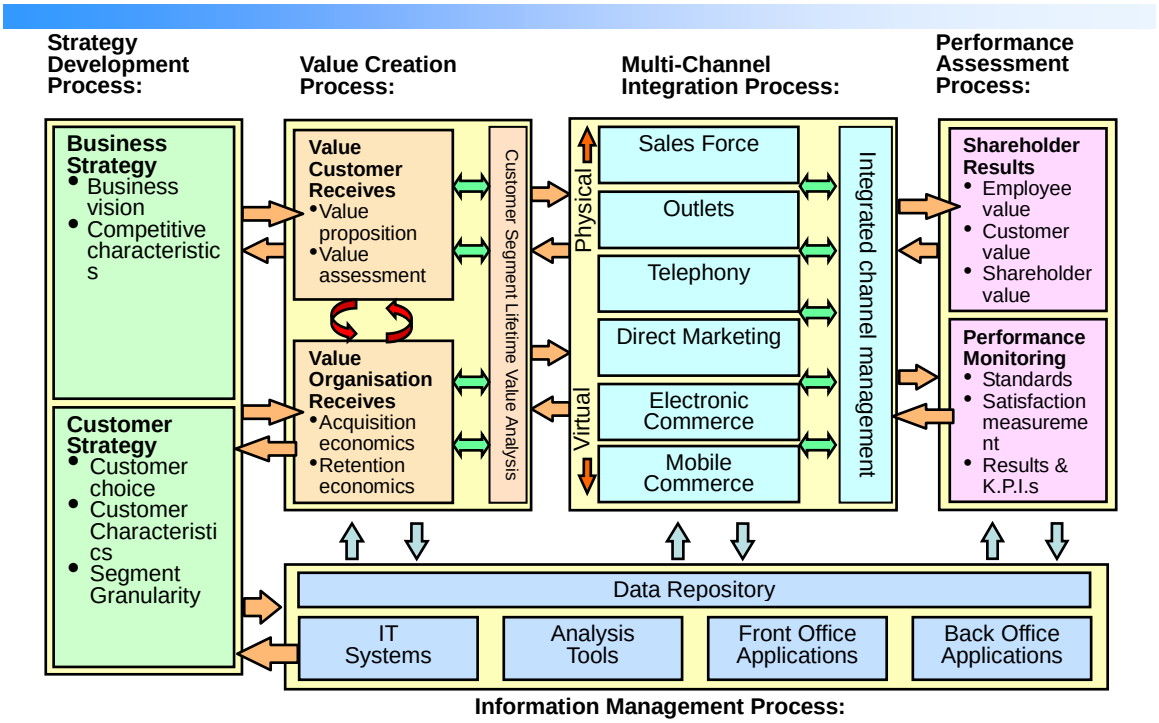


Figure 2.1 A Conceptual Framework for CRM Strategy

Source: Payne A. and P. Frow (2005), A Strategic Framework for Customer Relationship Management, Journal of Marketing, Vol. 69, October, pp. 167-176.

Although Payne and Frow (2005) illustrated the interactive set of strategic processes in CRM and provided a strategic insight into achieving greater success of CRM, the practical operation of each cross-functional process in CRM and their causal relationships still remain vague. Their article is conceptual rather than empirical, indicating a gap in how the firm implements its CRM relative to their framework as best practices (Boulding et al., 2005). Comparatively, Sin et al.'s (2005) empirical study, in the context of service firms in Hong Kong's financial industry, provided a detailed insight into what constitutes CRM and its substantial influence on business performance, though both of them similarly positioned CRM as a strategic approach. Sin et al. (2005) conceptualized CRM as a multi-dimensional construct and demonstrated the impact of CRM on marketing and financial performance. The four key constructs of CRM in their

work are explained as below:

- Key customer focus involves a customer-centric strategy and continually delivering superior and added value to key customers through customized offerings. Key facets of this construct refer to understanding and satisfying customers' needs, providing customers with customized offerings and fostering customer interaction in an ongoing two-way communication based on the collaboration and cooperation, for establishing and maintaining long-term relationships.
- Organisational structure, organisation-wide commitment of resources and human resources management are critical factors for successful CRM.
- Key facets of "KM" include knowledge learning and generation, dissemination, sharing and responsiveness. Sin et al. (2005) valued the development of "learning relationship" through collecting knowledge about customers, i.e. customer needs and preferences, to help firms incorporate customer information into strategic business intelligence. They also highlighted the significance of sound mechanisms for sharing customer knowledge to facilitate concerted actions by different departments. Their view is in line with those proposed by other scholars (Bose, 2004; Campbell, 2003; Croteau and Li, 2003; Davenport and Prusak, 1997; Gold et al., 2001; Minna and Aino, 2005; Quintas et al., 1997). Strictly speaking, the notion of KM in their work is restricted to the field of knowledge process capability.
- CRM needs "information-intensive strategies" through IT to create customer value and to provide customized offerings for the promise of one-to-one relationship. This perspective has been supported by scholars (Winer, 2001;

Massey et al., 2001; Gibbert et al., 2002; Gebert et al., 2003; Ryals and Payne, 2001).

From the above review, it is noted that these scholars viewed CRM as a comprehensive set of concrete organisational activities which are grounded on CKM capability that can connect and integrate all business processes (e.g., marketing, sales and service) to enhance the development of customer relationship.

Furthermore, Zablah et al. (2004) attempted to analyse the nature of CRM through an extensive literature in terms of process, strategy, philosophy, capability and technology-based perspectives. They delineated CRM's domain from the process perspective and concluded that the core elements of CRM are customer knowledge management process and customer interaction management process, which enable firms to build and sustain a profit-maximizing portfolio of customer relationships. Specifically, knowledge management capability is the requisite input of CRM and a profit-maximizing portfolio of customer relationships through effective interaction management process is the requisite output of CRM. These two major processes of CRM in Zablah et al.'s (2004) theoretical framework are summarized as below:

- Knowledge management process focuses on creating and leveraging the customer/market knowledge to build and maintain a portfolio of customer relationships that maximizes organisational profitability. This process, including data collection, intelligence generation and intelligence dissemination, can be viewed as knowledge process capability discussed in previous studies.

- Interaction management process leverages available intelligence from KM process to build and strengthen customer relationships by enhancing the quality of individual exchange episodes. The interaction focuses on the exchange of core benefits, products and services for money, information exchange and social exchange and interpersonal exchange.

Similarly, Mack et al. (2005) identified four core elements of CRM, i.e. customer intelligence, interaction, customization and lifecycle management, as below:

- Customer intelligence management refers to a better understanding of the customers' needs and contains the management of all customer information that is the foundation of CRM. It means an analysis of existing data and its availability throughout the organisation and generation of new customer insight in a systematic way.
- Customer interaction management focuses on the direct interaction between the firm and its customers during each sales transaction. The firm should work on continual customer-oriented improvements through multi-channel management like the customer interaction centre (CIC) and complaint management.
- Customization covers the customer-oriented design and the continual improvement of the firm's products and services. Mass customization focuses on the systematic use of customization of the firm's offerings to meet customers' specific needs.
- Customer lifetime management, including customer recruitment, retention and recovery, tries to build up, sustain and expand on the long-term

customer relationships by using customer intelligence management.

Other scholars (Coltman, 2007; Chen et al., 2009; Wang and Feng, 2012) viewed CRM as organisational capability that represents deliberate and persistent efforts in a combination of human, technical and business related capabilities. They argued that CRM should reflect the organisational skill at systematically and routinely establishing, maintaining, upgrading and re-establishing beneficial relationships with customers. They conceptualized CRM capability as a multi-dimensional construct which refers to practical organisation activities that help firms improve the effectiveness in terms of the creation of customer value, positional advantage and subsequent improved performance. For example, Coltman (2007) conceptualised CRM capability as three customer relating abilities, including: 1) skills and experience at converting data to customer knowledge, 2) level of IT infrastructure and 3) alignment of incentives, customer strategy and structure. This perspective captures the importance of combining technological resources, human skills and business processes in a way that makes for a superior CRM capability towards customer value that competitors cannot match. Similarly, Chen et al. (2009) argued that CRM capability comprises three abilities: relationship marketing (RM), customer-focused information technology (CFIT) and customer-focused organisational climate (CFOC). Their perspective was developed around the argument that firms can successfully meet customers' needs only when there is sufficient cooperation between marketing, operations, human resources, customer data and information technology. Next, Wang and Feng's (2012) empirical study, in the context of service firms in Chinese service industries, identified four key constructs of CRM capability as below:

- Customer interaction management capability (CIMC) refers to the skills that firms use to identify, acquire, retain and partner with customers. It focuses on the understanding of customers' needs to create and maintain relationships through interactive two-way communications and continual dialogues.
- Customer relationship upgrading capability (CRUC) refers to the process that firms implement for up-selling, sell more expensive items, upgrades and cross-selling, sell additional products or service, to existing customers after careful customer data analysis. Add-on selling includes cross-selling, up-selling and buying more of the same product and service.
- Customer knowledge management capability (CKMC) refers to all the activities that are directed towards gathering and analyzing customer information, generating and disseminating in-depth customer knowledge to build and maintain a portfolio of customer relationships that maximizes organisational profitability.
- Customer win-back capability (CWC) refers to the activities to re-establish the relationship with lost or inactive customers.

Finally, Woodcock et al. (2000) specified key principles and tasks in the QCi Customer Management (CM) Model (see Figure 2.2) that describes several important management activities to good business performance. The emphasis of the CM model is to find the right customers, get to know them, grow their value and retain their business in the most efficient and effective way by managing all customer interactions for enhancing customers' experiences during each stage of the customer life cycle (Woodcock et al., 2000). In the QCi Customer Management model, customer management activity (CMA)

are the core activities which are about developing practical and efficient acquisition, development, retention and efficiency plans to deliver the proposition across the customer lifecycle. CMA is directly linked with the customer value proposition, customer experience and processes management which are closely associated with information and technology (IT) that exists to help organisations understand customer data application, acquisition and maintenance in managing customers. It increases visibility of appropriate customer data to customers, employees and partners for supporting business integration requirements (Wright and Stone, 2010). Additionally, analysis and planning align resources to value segments and emphasizes a clear and comprehensive understanding of the value and behaviour of customers based on the sources of customer knowledge in order to enhance customer acquisition, development and retention through a customer proposition. Meanwhile, a customer proposition based on customer knowledge should be defined at a detailed level that drives the experience the customer can expect and develop to match customers' needs and wants. In short, it is concluded that customer knowledge management capability can be viewed as a foundation to support all activities in the QCi Customer Management Model for building the customer experience and long-term customer value.

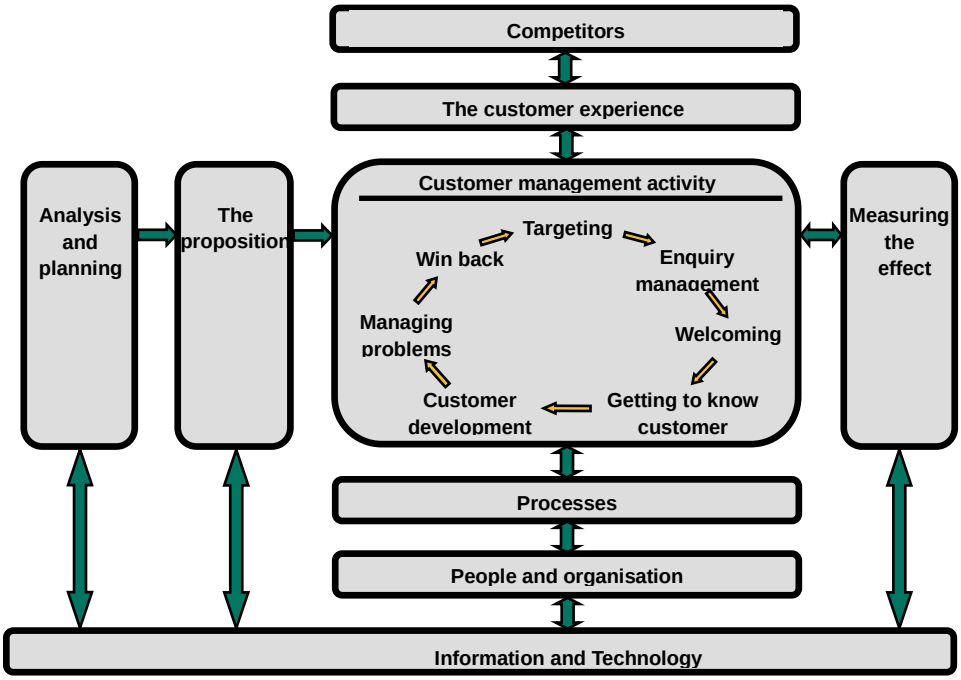


Figure 2.2 The QCi Customer Management Model

Source: Woodcock, N., Starkey, M. W. and Stone, M. (2000), The customer management scorecard: state of the nation - a strategic framework for benchmarking performance against best practice, London, Business Intelligence.

This section reviewed several CRM models in past studies and discussed respectively their significant natures. In the following section, a further identification of key constructs of CRM based on this review is proposed to form the foundation of the research framework in this thesis.

2.4.2 Identification of Key Constructs of CRM

Following the preceding review, this section will identify the key constructs of CRM used in the proposed research model. Table 2.3 shows a description and representative core notion of the individual CRM model, outlines how these models vary in both the

actual constructs and the number of constructs used in terms of customer knowledge, CKM capability, customer interaction and customization and provides a summary of the sources of each of these constructs from the relevant literature. The list of key constructs of CRM was collected and summarized from an extensive CRM literature. Each of key constructs was selected based on two criteria: 1) for a construct to be considered a core construct it must be cited multiple times by different scholars. This indicates that the construct was sought across many types of CRM studies and 2) a construct must be conceptually consistent with the definition of CRM used in this thesis. It should cover a set of concreted organizational activities conducive to facilitating CRM's operations so that customer benefits and the firm's performance could be enhanced. During the identification of these key constructs, careful attention was paid to select constructs across the literature.

First, the core theme of most CRM studies in Table 2.3 involved aspects of intensive customer knowledge and CKM capability which play a pivotal role of achieving the goal of CRM, i.e. improving customer satisfaction, sustaining customer loyalty and ultimately raising long-term profitability. Indeed, the majority of studies mentioned various aspects of the uses of customer knowledge and CKM capability, e.g. customer intelligence, customer information, accessibility/transmission of organisational information, information-processing capability, knowledge management processes, information management process and organisational knowledge capability. Although the terms scholars used and the nature of the process they described differ slightly, this thesis considers the nature of context and thus views them as the similar domain related to customer knowledge and CKM capability. For example, the concepts of "identifying and differentiating customers", "customer profiling" and "activities and analyses of

customer database and targeting customers" listed in individual studies have been deemed to have strong connections with the areas of customer knowledge and CKM capability in nature, which can enable firms to effectively identify and target the customers and provide their offerings to fit customers' needs. Several potential CRM constructs were not included in the list as these constructs were mentioned in only few studies and therefore failed to achieve critical mass for inclusion in the list of key constructs of CRM.

CRM is defined as data-driven marketing (Campbell, 2003; Peppers and Rogers, 2011; Winer, 2001; Sigala, 2006). It means that customer knowledge and CKM capability play critical roles in enabling firms to develop and sustain a long-term customer relationship (Buttle, 2010; Gebert et al., 2003; Ryals and Payne, 2000; Wang and Feng, 2012). For instance, Peppers and Rogers (2011) stated that "identifying and differentiating customers" is based on collecting and analyzing customer characteristics, i.e. habits and preferences. Wells et al. (1999), Körner and Zimmmermann (2000) and Winer (2001) highlighted the development of "the creation and integration of customer data", i.e. transaction data, response and descriptive information, for "customer profiling". Consequently, an accepted consensus is that customer knowledge and CKM capability facilitate the core processes of CRM, i.e. marketing, sales and customer service, to assist firms in specifically developing marketing activities which allocates effectively organisational resources to support all business activities that are suited to customer needs and expectations (Gebert et al., 2003). In this regard, the key issue needing more attention is how to effectively and efficiently employ organizational knowledge capability to improve customer benefits and firm performance during the course of developing customer relationship (Campbell, 2003).

Secondly, several other scholars have identified CKM capability as one of the critical success factors of CRM (Croteau and Li, 2003; Campbell, 2003; Coltman, 2007; Minna and Aino, 2005; Jayachandran et al., 2005; Lin et al., 2010; Payne and Frow, 2005; Soliman, 2011; Sigala, 2005; Sin et al., 2005; Wang and Feng, 2012), though operational contents of CKM capability is insufficient. As Boulding et al. (2005) and Payne and Frow (2005) stated individually:

> CRM is mainly underpinned by the following practical capabilities to generate customer value: 1) the intelligent use of data and technology to acquire customer knowledge; 2) the diffusion of this knowledge to the appropriate stakeholders making marketing decisions; and 3) the utilisation of this knowledge by managers and employees to select and target customers for marketing purposes.
>
> (Boulding et al., 2005)

> One most important pivotal role to interact with the each process in CRM is "information management capability" because it provides a means of sharing relevant customer and other information throughout the enterprise and replicating the mind of the customer.
>
> (Payne and Frow, 2005)

Indeed, the nature of "information management capability" in Payne and Frow's (2005) study is similar to the perspectives of "customer profiling" (Körner and Zimmermann,

2000), "converting data to customer knowledge" (Coltman, 2007), "information processing capability" (Stringfellow et al., 2004), "accessibility/transmission of organisational information" (Wells et al., 1999), "KM capability" (Sin et al., 2005), "information sharing" (Lin et al., 2010) and "customer knowledge management" (Soliman, 2011; Sigala, 2005; Zablah et al., 2004). Although different terminologies are being used by these scholars, in essence, they are the same in terms of meanings and functions in CRM, representing a fact that customer information should be properly captured, analysed and managed to generate the customer profile and replicate the mind of the customer for achieving the profit-maximizing of customer relationships. However, though existing CRM does well in describing the "whats", it falls short of the capability of understanding the "whys" of customer behaviour (Stringfellow et al., 2004), meaning the lack of knowledge residing in customers which is the greatest source of value under-leveraged for firms (Gibbert et al., 2002). Therefore, these studies were rather conceptually descriptive in nature and lacked a practical insight into the measure of customer knowledge and CKM capability and their impact on customer benefits and the firm's performance.

Thirdly, customer interaction is identified as another critical CRM construct by scholars (Körner and Zimmermann, 2000; Payne and Frow, 2004; Payne and Frow, 2005; Mack et al., 2005; Peppers and Rogers, 2011; Peelen, 2005; Rootman et al., 2007; Swift, 2001; Sigala, 2006; Wells et al., 1999; Wang and Feng, 2012; Zablah et al., 2004). Customer interaction is viewed as a set of functions that allow firms to communicate with customers, across multi-channels, to meet customers' requirements and try to persuade them to behave more profitably. A common agreement from those scholars is that it focuses on the selection and the organisation of the offered multi-channels and the

contents of communications. Multi-channels include: 1) physical contact, employing sales force with field account management, service and personal representation and outlets, branches, stores, depots and kiosks and 2) virtual contact, including e-mail, telephone, fax, radio and television, chat room, call centre and m-commerce or electronic channels; The contents of communication focus on offering value-added information for customers and ensuring that the customer experiences highly positive interactions within these channels. Donaldson and O'Toole (2007) stated that multi-channels interaction should ensure that accounts receive selling effort coverage in an efficient and effective way which could be measured by the customer response and contacts. Sale organisations must operate the effective communication based on new IT with customers to ensure their sales operations meet the needs of both firms and customers, to improve customer contact and to enhance services (Donaldson, 2007).

Finally, the majority of studies emphasized the potential for shifting from mass marketing to customization, indicating that CRM should treat individual customers differently and focus on delivering superior customer value through customized offerings to create a higher level of customer satisfaction (Mack et al., 2005; Peppers and Rogers, 2011; Peelen, 2005; Sin et al., 2005; Sigala, 2006; Winer, 2001). In fact, the concept of customisation has been highlighted and used in numerous studies (Buttle, 2010; Comstock et al., 2004; Davis, 1987; Duray et al. 2000; Foss and Stone, 2001; Gilmore and Pine, 1997; Huang and Lin, 2005; Lin et al., 2009; Pine, 1993; Pine et al., 1995; Peppard, 2000). Customization is not limited to hardware by the manufacturer. It can also include software, services and packaging of products in response to individual customer's needs (Comstock et al., 2004).

As shown in Table 2.3, the majority of studies have proposed mixed constructs to engage in CRM without providing specific details of how these constructs can be integrated and used as concrete organizational capability favorable to enhancing customer benefits and the firm's performance. However, although the key constructs of CRM the scholars used are varied, the core theme of CRM in these studies is that it evolves around its focus on collecting and intelligently using customer knowledge, customizing products and services to fit each individual customer's needs, which interacts with customers through multiple communication channels to endure better relationships. That is, CRM can be a firm's practice that reflects a set of organizational activities supported by both technology and processes to develop long-term customer relationships through IT-based CKM capability, multichannel customer interaction and customisation to provide high-quality operations, fulfilment and service.

While each study could potentially "stand on its own," it is the researcher's contention that viewing CRM as a multi-dimensional construct could provide best practical perspective with the aim of improving marketing effectiveness in both customer benefits and the firm's performance. Therefore, these constructs would be developed around the argument that CRM covers both organizational internal and external mechanisms, i.e. customer knowledge and CKM capability are largely organisational internal mechanisms for "customer analysis", whereas customer interaction and customisation are organisational external mechanisms for "action visible to the customers" (Lin et al., 2009; Peppers and Rogers, 2011), and lies at their intersections that lead to the emergence of a superior customer-relating capability that creates subsequent improved performances (Day, 2003). Specifically, given the close conceptual alignment of CRM and marketing, the list of desired constructs would be

used as the critical drivers of customer benefits (i.e., customer value and customer satisfaction), which in turn lead to enhance the firm's performance (i.e., customer loyalty and CLV).

Table 2.3 Summary of Articles Describing CRM in terms of Customer Knowledge, CKM capability, Customer Interaction and Customization

Author(s)	Key Constructs of CRM	Key Themes	Key Constructs of CRM			
			CK	CKMC	CI	CU
Wells et al. (1999)	Four key dimensions are business process analysis, integration and redesign of customer data, IT-enabled customer interaction and accessibility/transmission of organisational information.	CRM should concentrate on one-to-one marketing through IT-enabled customer interaction and organisational information management ability.	✓	✓	✓	
Woodcock et al. (2000)	Specifies key principles and tasks in CRM in building the customer experience and long-term customer value.	Explaining network of relationships e.g. with marketing. Provides case note examples and explains the QCi Model with its contributions.		✓	✓	
Körner and Zimmmermann (2000)	Five dimensions (customer interaction, virtual communities, trust, value added and customer profiling) and two internal organisational management mechanisms (process and control) are included in the Model.	In CRM, five key constructs are interrelated with each other and two management mechanisms are inherent in all dimensions.		✓	✓	
Swift (2001)	CRM is a recyclable process that includes knowledge discovery, market planning, customer interaction and analysis and refinement.	CRM should focus on the development of customer knowledge database to effectively manage CRM activities.	✓		✓	
Winer (2001)	CRM contains 7 basic components: customer database activity, analyses of database, given the analyses, decision about which customers to target, tool for targeting the customers, relationship programs, privacy issues and metrics for measuring CRM program.	The nature of CRM activity is based on the collection of customer information. 7 steps have been demonstrated as the key components of CRM.	✓	✓		✓
Plakoyiannaki and Tzokas, (2002)	CRM includes learning and marketing orientation capability, integration capability, analytical capability, operational capability and direction capability.	A CRM capability guideline has been proposed to assist firms to identify and develop capability enabling the successful implementation of CRM.	✓	✓		
Stringfellow et al. (2004)	CRM is alignment of 3 building blocks: insight into customer decision-making, information about customers and information-processing capability.	Information about customers and information-processing capability play a pivotal role for improving a firm's long-term profitability	✓	✓		
Zablah et al. (2004)	KM processes and interaction management processes are posited as the major sub-processes of the CRM.	Capabilities related to KM and interaction management are vital for building & sustaining a profit-maximizing portfolio of customer relationships.		✓	✓	
Sigala (2006)	CRM requires the management and alignment of three managerial processes: ICT management, RM (internal and external) and KM.	Information and communication technology with KM capability needs to be integrated into a knowledge-based CRM to gain customer insight, build relationship and enable customization.	✓	✓	✓	✓
Mack et al. (2005)	Four core constructs of CRM activity include customer intelligence, interaction, customization and lifecycle management.	A strategic approach to CRM was presented by a diamond in which four core CRM activities are positioned within CRM vision and technical/cultural context of the organisation.	✓	✓	✓	✓
Sin et al. (2005)	CRM is a multi-dimensional construct consisting of four components: key customer focus, CRM organisation, KM and technology-based CRM.	Defining CRM as a multi-dimensional construct and making a link between CRM and firm performance.		✓		✓

Table 2.3 (Continued)

Payne and Frow (2005)	5 processes as key generic CRM processes: strategy development process, the value creation process, the multi-channel integration process, the information management process and the performance assessment process.	Positioning 5 cross-functional dimensions as key CRM & identify key elements within each dimension with iterative nature between dimensions. Information management dimension has pivotal role.		✓	✓	
Peelen (2005)	Four marketing aspects of CRM include customer knowledge, multichannel communication (customer interaction), offering and achieving an individual value proposition (customisation) and formulating a relationship strategy.	CRM focuses on facilitating customer knowledge capability, customizing products or services to meet customer's needs and interacting with customers through multiple channels to grow long-term customer relationships.		✓	✓	✓
Coltman (2007)	CRM is a multi-dimensional construct consisting of three components: skills and experience at converting data to customer knowledge, level of IT infrastructure and alignment of incentives, customer strategy and structure.	CRM represents organisational capability of deliberate and persistent efforts in a combination of human, technical and business related capabilities and can create positional advantage and subsequent improved performance.	✓	✓		
Rootman et al. (2007)	Attitude, knowledgeability and two-way communication are important variables influencing the effectiveness of the CRM of banks.	Identifying the influence of employees on the effectiveness of CRM in banks to improve bank-client relationship.		✓	✓	
Chen et al., (2009)	CRM is a multi-dimensional construct consisting of three components: relationship marketing (RM), customer-focused information technology (CFIT) and customer-focused organisational climate (CFOC), to measure customer relationship management effectiveness (CRME).	Defining CRM effectiveness as a multi-dimensional construct and making a link between CRM and outcome indicators as customer loyalty.		✓		
Lin et al., (2010)	Specifies five key CRM activities, including information sharing, customer involvement, long-term partnership, joint problem solving and technology-based CRM	Investigating the effects of five dimensions of CRM on innovation capabilities	✓	✓		
Peppers and Rogers (2011)	CRM refers to identify, differentiate and interact with an individual customer and customize product or service to fit each individual customers' needs.	CRM aims to change firms' behaviour toward an individual customer based on what the customer tells and what else firms know about that customer to achieve one-to-one marketing.	✓		✓	✓
Soliman (2011)	Focus on main customers, the organisation efficiency and customer knowledge management are identified as the important elements of CRM	Exploring the theoretical foundations of CRM and its relationship to the marketing performance.		✓	✓	
Wang and Feng (2012)	CRM capability is a multi-dimensional construct consisting of four components: customer knowledge management capability, customer interaction management capability, customer relationship upgrading capability and customer win-back capability.	Defining CRM capability as the processes that reflect the firm's skill at systematically and routinely establishing, maintaining, upgrading and reestablishing beneficial relationships with customers to improve firm performance by creating and delivering superior customer value.		✓	✓	

CK: Customer Knowledge; CKMC: Customer Knowledge Management Capability; CI: Customer Interaction; CU: Customization
✓: Indicates support for each of the four constructs of CRM
Source: summarized by the author

2.4.3 Critique of Past CRM Models

As illustrated in Table 2.3, CRM has been described, defined and conceptualized in several ways, reflecting a variety of viewpoints of different scholars. This thesis attempts to clarify the nature of CRM by synthesizing these core constructs that can reflect its best practice and be treated as triggers to marketing achievement in customer benefits and the firm's performance. Therefore, this thesis presents the following critique of past CRM models:

1. An extensive literature review reveals that various scholars on the subject of CRM hold divergent views on the exact domain of CRM because of its multi-faceted complexity. Although these reported studies attempted to clarify the constructs and the conceptualization of CRM, its nature remains ambiguous. In addition, CRM's influence on the firm's performance is inconclusive because the generative mechanisms through which CRM enhances performance have not been fully considered. Amid this situation, managers have little guidance on how to focus their CRM efforts on improving organizational performance. These questions activate the researcher to identify comprehensively concrete CRM's constructs that can reflect its best practices and be universally used, and to analyze whether CRM links directly to the firm's performance or whether this relationship is mediated by customer benefit. In particular, the mediating effects of customer value and customer satisfaction are considered.

2. Previous studies conceptually and empirically proposed mixed constructs to engage in CRM with the aim of deepening the understanding of a CRM-performance

relationship, representing how these CRM models vary in both the actual constructs and the number of constructs used and that the selection of these constructs is still indistinct. Therefore, the researcher asserts that a construct to be considered should be based on the criteria that it must be cited multiple times by scholars across many types of CRM studies and be conceptually consistent with the CRM's definition used in this thesis, which cover a set of concreted activities to facilitate organisational operations for enhancing customer benefits and the firm's performance. These various constructs are integrated into a single study to provide a holistic picture of a CRM-performance relationship, though some of them might be used individually in the previous studies.

3. A key implication stemming from the existing literature claims that customer knowledge and CKM capability link and integrate marketing, sales and service, and thus assist firms in specifically facilitating the cross-functional integration and allocating effectively organizational resource conducive to enhancing customer benefits and the firm's performance. Disappointingly, most studies were found to be rather conceptually descriptive, and thus the empirical evidence is limited. Consequently, given the important role being played by them, there is a need to include them as the key constructs of CRM used in this thesis.

4. Although most scholars are accurate in their statement that customer knowledge and CKM capability play a determinant role in creating CRM benefits, very little has been done in terms of creating a valid measurement scale and testing this concept empirically. True benefits are possible only by integrating CRM with knowledge management to create a knowledge-enabled CRM. Because the content of customer

knowledge and CKM capability is conceptual in most CRM studies, their operational content and valid measurement scale are needed.

5. In CRM literature, the performance of CRM was commonly evaluated only from the firm's perspective, while some indicators of performance should be preferably assessed by customer perception. According to Sin et al. (2005), contrasting a firm's CRM performance (i.e., customer benefit and the firm's performance) as evaluated by internal managers' responses with that as perceived by its customers is significant in order to capture the nature of the CRM-performance relationship. Therefore, there is a need to explore simultaneously whether CRM' performance as seen by the firm coincides with that perceived by customers, because a potential difference between them does exist.

6. Following (5), there was a lack of including customer value as a key consequence of CRM in the previous studies when modeling a CRM-performance relationship. This perspective is consistent with Payne and Frow (2005) and Boulding et al. (2005), who argued that CRM should consider the creation of value for customers as the core outcome, and with Ulaga and Eggert (2006), who asserted that customer value should be a key constituent of the firm-to-customer relationship. Furthermore, according to Kotler et al. (2008), Ravald and Grö nroos (1996) and Woodruff (1997), CRM and marketing should focus on the best practice to systematically and effectively maximize value to customers. Given its significance, this draws the researcher's attention to exploring the role of customer value in a CRM-performance relationship.

Even if scholars studied CRM in different contexts and from a different perspective, this thesis summarized some conclusions. First, CRM and knowledge management have a high synergy potential and should be used in conjunction with each other. In nature, CRM needs "information-enabled strategy" to promote the realization of marketing effectiveness. As Plessis and Boon's (2004) definition of CRM stated,

> CRM is defined as the building and managing of customer relationships on an organisational level through understanding, anticipating and managing of customer needs, based on customer knowledge, to increase organisational effectiveness and efficiency and thereby increasing profitability (p. 76).

Secondly, unlike product and service attributes that can be readily copied, the in-depth customer knowledge management capability represents a unique source of sustainable competitive advantage. Consequently, both customer knowledge and CKM capability should be included as the key constructs of CRM. Thirdly, CRM evolves and develops as a sequence of interactions that can strengthen customer relationships by enhancing the quality of each individual interaction episode. Therefore, customer interaction should be actively managed and work on continuous customer-oriented improvements through multi-channels interaction management. Finally, a fundamental for CRM to build mutually beneficial relationships is to customise offerings to fit individual customers' specific needs. Given advances in IT, firms have greater availability to learn more about changing customers' requirements and thus customize their offerings in an attempt to create superior customer value or to provide specific solutions tailored to individual customers. As a result, four key constructs of CRM (i.e., customer

knowledge, CKM capability, customer interaction and Customization) have been proposed and are expected to be used as the organizational practical capability to drive customer benefits and the firm's performance.

Table 2.4 Literature Source of Key Constructs of CRM

Construct	Literature source
Customer knowledge	Coltman (2007), Lin et al. (2010), Gebert et al. (2003), Lesser et al. (2000), Massey et al. (2001), Mithas et al. (2005), Mack et al. (2005), Park and Kim (2003), Peppers and Rogers (2011), Rowley (2002), Slater and Narver (1994), Stringfellow et al. (2004), Sigala (2006), Winer (2001) and Wells et al. (1999)
CKM capability	Bose and Sugumaran (2003), Bose (2004), Chen et al. (2009), Coltman (2007), Cross and Baird (2000), Croteau and Li (2003), Campbell (2003), Davenport and Prusak (1997), Jayachandran et al. (2005), La and Kandampully (2004), Lin et al., (2010), Lesser et al. (2000), Minna and Aino (2005), Payne and Frow (2005), Mack et al. (2005), Rootman et al. (2007), Soliman (2011), Stringfellow et al. (2004), Sin et al. (2005), Sigala (2006), Wells et al. (1999), Winer (2001), Wang and Feng (2012), Woodcock et al. (2000) and Zablah et al. (2004)
Customer interaction	Chen et al. (2009), Körner and Zimmermann (2000), Mack et al. (2005), Peppers et al. (1999) Peppers and Rogers (2011), Peelen (2005), Payne and Frow (2004, 2005), Sigala (2006), Sin et al. (2005), Rootman et al. (2007), Soloman et al. (1985), Su et al. (2006), Wells et al. (1999), Xu and Walton (2005), Wang and Feng (2012), Woodcock et al. (2000) and Zablah et al. (2004)
Customization	Bettencourt and Gwinner (1996), Kahn (1998), Mack et al. (2005), Parvatiyar and Sheth (2001), Peppers et al. (1999), Peppers and Rogers (2011), Peelen (2005), Sin et al. (2005), Sigala (2006), Wortzel (1987) and Winer (2001)

With the goal of this thesis, CRM was defined as below:

> CRM refers to a firm's practice which covers a set of organisational activities supported by both technology and processes that are concerned with systematically and effectively managing customer relationship for providing customers with high-quality operations, fulfilment, products and services through customer knowledge, IT-based CKM capability, multichannel customer interaction and customisation.

2.5 Customer Relationship Management Model in this Thesis

As was identified in Chapter One and will be discussed in more detailed in Chapter Three, a CRM-performance framework is developed through an extensive literature review, incorporating variables that are grounded on the inputs from the analysis of relationship marketing, social media and CRM's influence in B-to-B markets and B-to-C markets. These inputs established the foundation upon which the underlying constructs that have not previously been presented in a single model, were chosen for testing in a CRM-performance model. Specifically, this thesis provides an insight into the understanding of CRM's effect on customer benefits and the firm's performance. This is in addition to the purpose of investigating causal relationships between the constructs, including CRM's constructs - customer knowledge, CKM capability, customer interaction and customisation - consumer value, customer satisfaction, customer loyalty and CLV. Here, CRM's constructs reflect a firm's practice as

organisational sources of advantage to improve customer value and customer satisfaction as customer benefits to form a positional advantage, which in turn enhances customer loyalty and CLV as the firm's performance to reflect the ultimate goal of CRM. In this thesis, these constructs have been examined in the banking industry in Taiwan from both the internal firm's perspective and the external customer's perspective.

In summary, the sections 2.1 to 2.5 provide a discussion of the context of the emergence and the content of RM and CRM, focusing on their evolution, nature and common characteristics, to clarify the blurring between them. These sections also demonstrate more conceptual clarity to the true domain of CRM and thus help building up the foundation forming the rationale for the choice of the underlying constructs in the proposed research model in this thesis.

2.6 Key Constructs of CRM

CRM has been discussed in terms of how it was defined and identified as a multi-dimensional construct (see section 2.3 and 2.4), including customer knowledge, CKM capability, customer interaction and customization. This section reviews the literature related to these four constructs of CRM, which formed the foundation of the proposed theoretical model in this thesis and were treated as separate variables in order to explore their impacts on customer benefits and the firm's performance. These constructs of CRM are discussed in more detail as below.

2.6.1 Customer Knowledge

Within competitive advantage considerations in today's digital economy, knowledge has been recognized as one of the main organizational assets to form a competitive advantage because it can neither be readily observed nor easily copied by competitors (Drucker, 1999; Kakabadse et al., 2005; Lesser et al., 2000; Pathirage et al., 2007). In the field of CRM, customer knowledge has been viewed as the foundation of CRM which enables firms to sustain continual products and services innovation and improvement to attract, develop and retain customers (Buttle, 2010; Cravens and Piercy, 2009; Garcia-Murillo and Annabi, 2002; Minna and Aino, 2005; Richards and Jones, 2008; Salomann et al., 2005; Su et al., 2006; Gebert et al., 2003; Lesser et al., 2000; Peppard, 2000; Park and Kim, 2003; Sigala, 2006).

Customer knowledge may have many contextual meanings and is dynamic and changes rapidly (Mithas et al., 2005). It can be defined as an understanding of customer preferences (Joshi and sharma, 2004), customer needs and customer profile (Park and Kim, 2003), organized and structured information about the customer (Li and Calantone, 1998) and systematic customer information that is transformed into capabilities for an effective marketing plan (Campbell, 2003; Minna and Aino, 2005). In the context of CRM, it focuses on obtaining detailed knowledge about customers' behaviour, preferences, needs and buying patterns for setting prices and promotions, adding value of products and services and customizing offerings to fit individual customers' needs (Bose and Sugumaran, 2003). Therefore, by utilizing it, firms can deliver proper products, services and solutions to customers and provide high quality of offerings to them. Given the importance of customer knowledge in CRM, Park and

Kim (2003) argued that firms should pay increasing efforts to collect not only transaction data, but various non-transaction data, i.e. membership activity, new customer referral and feedback idea, to develop a better customer relationship. Ö sterle (2001) proposed three sorts of customer knowledge, including knowledge about customers, knowledge for customers and knowledge from customers. Disappointingly, he did not pay further attention to specifying its operational content. By contrast, Gebert et al. (2003) and Su et al. (2006) demonstrated a more detailed category of customer knowledge in CRM as below:

- Knowledge for customers refers to the knowledge about products, markets and suppliers to satisfy customers' knowledge needs or the knowledge customers want fulfilled from a product and service purchase and usage.
- Knowledge about customers is about customer histories, attitude, preference, needs and perceived value for products and services, expectations and purchasing activity to understand customer's motivation and to address them.
- Knowledge from the customers means customers' knowledge of products and services, suppliers and markets or customers' needs pattern extraction which can be gathered by firms to sustain service improvements or new product developments. It enables firms to make the appropriate business decisions in the product variant development plan and marketing activities.

Similarly, Salomann et al. (2005) distinguished customer knowledge as knowledge for, from and about customers:

- Knowledge for customers comprises information about product, market and supplier. It is a prerequisite to support customers in their buying cycle and impacts the customer's perception of the product and service quality.
- Knowledge from customers, such as knowledge about products, suppliers and market trends, can be used via appropriate feedback mechanisms to enable a systematic improvement and innovation of products and services.
- Knowledge about customer encompasses the customer's master data, past transactions, present needs and requirement, future desires, connections, purchasing activity and financial capability.

Furthermore, Park and Kim (2003) specified customer knowledge as three types of information, such as information of customers, information for customers and information by customers. Although the terminologies Park and Kim (2003) used are somewhat different, they are the same in terms of meaning in nature. Information of customers, e.g. personal and transaction data, is the basic type of information most widely collected for CRM. Particularly, for banks and credit card firms, they keep enormous amounts of it and use it to identify the profitable customers for target marketing; Information for customers refers to the useful product, service and organisational information that firms provide for customers to make more informed decisions; Information by customers contains customers' direct complaints, needs and suggestions which can be applied to develop new products and services or improve critical business processes. Based on the above literature review, there is an accepted consensus that customer knowledge can be classified as knowledge about, for and from customers. In the following these three types of customer knowledge are discussed.

Knowledge about Customers

"Knowledge about customers" is accumulated by a firm with the aim of understanding and addressing its customers (Gebert et al., 2003; Nejatian et al., 2011). Such processes are mainly triggered by a firm to obtain organizational insight on each customer's demand and preference. It refers to customers' demographics, a record of purchase transactions (Davenport et al., 2001; Winer, 2001), the customer's sales volumes, profitability, purchasing patterns, frequency, attitude and preference (Park and Kim, 2003; Salomann et al., 2005; Su et al., 2006) and customers' histories, expectations and requirements (Gebert et al., 2003; Ö sterle, 2001).

Knowledge for Customers

"Knowledge for customers" is required to satisfy customers' knowledge needs (Gebert et al., 2003). Such processes are mainly triggered by a firm with the aim of delivering knowledge to support and make customers understand its offered products and services better (Nejatian et al., 2011). It is a prerequisite to support and assist customers in their buying cycle and affects customers' perceptions of products and services quality (Garcia-Murillo and Annabi, 2002; Salomann et al., 2005). "Knowledge for customers" comprises knowledge on products and services, markets and suppliers (Garcia-Murillo and Annabi, 2002), knowledge for customer needs (Ö sterle, 2001) and organisational information that is perceived useful by customers (Park and Kim, 2003).

Knowledge from Customers

"Knowledge from customers" is the knowledge that the customers have about the issues that are related to products and services that they are interested in buying (Garcia-Murillo and Annabi, 2002). This knowledge resides in customers, and thus firms should pay more efforts to it more than two other types. Such processes are mainly triggered by customers and involve a transfer of information from the customer to the firm, e.g. appropriate feedback mechanisms (Gebert et al., 2003; Salomann et al., 2005). It contains the knowledge of products and services customers use and perceive, customer complaints, propositions and claims (Garcia-Murillo and Annabi, 2002; Ö sterle, 2001; Park and Kim, 2003; Rowley, 2002).

Therefore, customer knowledge used in this thesis refers to the knowledge or information about, for and from the customer. The construct of customer knowledge included in the proposed theoretical model will be operationalized and measured by these three types of knowledge.

2.6.2 Customer Knowledge Management (CKM) Capability

Several scholars contended that CKM capability is the core of CRM and the most significant critical success factor (CSF) affecting CRM performance (Alavi and Leidner, 1999; Boulding et al., 2005; Croteau and Li, 2003; Campbell, 2003; Minna and Aino, 2005; Jayachandran et al., 2005; Payne and Frow, 2005). A high level of the capability to manage customer knowledge enables firms to have a better and timely design of products and services, make intelligent decisions, foster effective and efficient

management of customer relationships and gain a competitive advantage in the market (Croteau and Li, 2003; Campbell, 2003). Following this introduction to the significance of CKM capability in CRM, the section (2.6.2.1) further seeks to investigate the nature of CKM capability. This is followed by a discussion in section (2.6.2.2) for two key dimensions of CKM capability, knowledge infrastructure capability and knowledge process capability.

2.6.2.1 The Nature of CKM capability

The notion of market knowledge capability proposed by Li and Calantone (1998) has been adopted by several scholars who transformed it as customer knowledge capability (Campbell, 2003) or customer knowledge management (CKM) capability (Minna and Aino, 2005). Minna and Aino (2005) drew the ideas of Li and Calantone (1998) concerning market knowledge capability and Campbell (2003) concerning customer knowledge capability and thus redefined CKM capability as the ability to integrate customer information and knowledge into organisational CRM processes and operations. Similarly, Salomann et al. (2005) conceptualized it as the ability of customer knowledge in order to enhance the customer relating capability of organisations. According to Minna and Aino (2005), firms should develop organisational capability to make full use of customer knowledge and to fulfil the promises of superior customer value for the firm's performance and competitive advantage.

Although the definitions of CKM capability are varied slightly, as outlined in Table 2.5, there is an agreement that it refers to customer relating capability of organisations that

generates, integrates and disseminates specific customer information in organisational CRM processes and operations for developing a customer specific strategy so that a long-term customer relationship is built and maintained. In nature, CKM capability is inimitable and immobile, and thus cannot be purchased in the market, because it is deeply embedded within the people and organisations and not observed readily from outside (Day, 1994; Prahalad and Hamel, 1990).

Table 2.5 Definitions of CKM Capability

Scholars	Definition
Croteau and Li (2003, P. 23)	Defined CKM capability as the ability of an organisation to capture, manage and deliver real time authenticated customer, products and services information in order to improve customer response and provide faster decision-making based on reliable information.
Alavi and Leidner (1999, p. 4)	Defined CKM capability as ability of an organisation to access internal and external information, build and implement knowledge management systems, facilitate of organisation change and promote of knowledge sharing through IT infrastructure.
Minna and Aino (2005, P. 6)	CKM capability refers to the ability to integrate customer information and knowledge into an organisational CRM processes and operations.
Campbell (2003, P. 376)	Customer knowledge capability refers to the processes that generate and integrate information about specific customers.
Li and Calantone (1998, P. 14)	Customer/Market knowledge capability refers to a series of activities that generate and integrate customer and competitor information.
Gold et al. (2001, p. 186)	Defined organisational knowledge capability as the ability to use prior knowledge to recognize the value of new information, assimilate it and apply it to create new knowledge and capabilities.
Salomann et al. (2005, p. 392)	CKM capability refers to the ability of utilization of knowledge for, from and about customers in order to enhance the customer-relating capability of organisations.
Jayachandran et al. (2005, p. 177)	Defined organisational knowledge capability as relational information processes encompassing the specific routines that a firm uses to manage customer information to establish long-term relationships with customer.
Zablah et al. (2004, p. 482)	CKM capability refers to all the activities that directed towards gathering and analyzing customer information, generating and disseminating in-depth customer knowledge to build and maintain a portfolio of customer relationships that maximizes organisational profitability.

Source: summarized by the author

Table 2.6 Summary of CKM Capability

Author	Key theme	Context	The dimensions of CKM capabilities	KIC				KPC			
				OS	TI	OC	SOS	AP	CP	AP*	PP
Minna and Aino (2005)	Identifying tentative constructs of CKM capabilities in CRM activity	Valid to be used in all context	Inter-functional cooperation, supportive organisational systems, cooperation with customers, supportive IT systems and organisational culture that supports organisational learning and customer orientation.	✓	✓	✓	✓				
Campbell (2003)	Identifying CKM capabilities in internal process perspective for firms to manage CRM program	Financial services	Customer information process, marketing-IT (information technology) interface, senior management involvement and employee evaluation and reward system.		✓	✓	✓	✓	✓	✓	
Gold et al. (2001)	Identifying key constructs of KM capabilities and the influence on firm performance	Finance and manufacturing firms	CKM capabilities include knowledge infrastructure capabilities consisting of technology, structure and culture and knowledge processes capabilities consisting of knowledge acquisition, conversion, application and protection.	✓	✓	✓		✓	✓	✓	✓
Bose (2004)	Knowledge management metrics	Valid to be used in all contexts	Knowledge creation, capture, refinement, store, management and dissemination with four enablers - culture, technology, infrastructure and measurement for knowledge across organisations.	✓	✓	✓		✓	✓	✓	
Sin et al. (2005)	Conceptualization and scale development of CRM and its influence on firm performance	Financial Industry	CKM capabilities refer to knowledge learning and generation, dissemination and sharing and responsiveness					✓	✓	✓	
Quintas et al. (1997)	Discussing a strategic knowledge management perspective	Valid to be used in all contexts	Organisational structure and culture, people, processes and technology.	✓	✓	✓		✓	✓	✓	
Davenport and Prusak (1997)	Discussing the content of knowledge management	Valid to be used in all contexts	Knowledge-oriented culture, technical and organisational infrastructure, senior management support, clarity of vision and language, nontrivial motivational aids and multiple channels for knowledge transfer.	✓	✓	✓	✓		✓		
Jayachandran et al. (2005)	Examining the key antecedent and impact of CKM capabilities on CRM performance	Services and goods firms in B-to-B and B-to-C markets.	Information reciprocity, capture, integration, access and use and are influenced by organisational culture, structure, incentives and CRM technology.	✓	✓	✓	✓	✓	✓	✓	
Sarvary (1999)	Examining the effect of KM on building long-term competitive advantage.	Valid to be used in consulting industry	IT infrastructure, organisational infrastructure, incentive schemes, culture and knowledge process capabilities consisting of knowledge acquisition, production and distribution.	✓	✓	✓	✓	✓	✓	✓	
Alavi and Leidner (1999)	Guiding the development and implementation of KM system	Valid to be used in a range of industries	Information-based capabilities, technology-based capabilities and culture-based capabilities		✓	✓		✓		✓	
Lesser et al. (2000)	Managing customer knowledge	Valid to be used in all contexts	Organisational infrastructure, senior management support, culture and knowledge process capabilities for acquiring, capturing, storing and developing	✓		✓	✓	✓	✓		

KIC; Knowledge Infrastructure Capability; KPC: Knowledge Process Capability; OS: Organisational Structure; TI: Technology Infrastructure; OC: Organisational Culture; SOS: Supportive Organisational Systems; AP: Acquisition Processes; CP: Conversion Processes; AP*: Application Processes; PP: Protection Processes
Source: summarized by the author

2.6.2.2 The Dimensions of CKM Capability

In this section, numerous scholars proposing specific aspects of CKM capability are introduced with the aim of examining the varieties of variables used and the key dimensions of CKM capability (see Table 2.6).

First, Bose (2004) categorized broadly the knowledge management into knowledge creation, capture, management, distribution and application. Bose (2004) focused mainly on the aspect of knowledge process capability that emphasizes knowledge reciprocity, capture, integration, access and use, though he mentioned slightly three enablers for knowledge management, i.e. organizational structure, culture and technology infrastructure, which contribute to the development of organisational learning for generating superior value and deliver better products and services to customers. Similarly, Sin et al. (2005) defined key facets of knowledge management capability as knowledge learning, generation, dissemination, sharing and responsiveness. They focused on the development of processes of learning relationship with customers and sharing mechanisms within the organisation. Another similar view from Jayachandran et al. (2005), who conceptualised relational information processes in CRM as information reciprocity, capture, integration, access and use for improving relationship performance, e.g. customer satisfaction. In reviewing above scholars' studies, it is concluded that their focus is on knowledge process capability and seems to be less comprehensive due to the lack of knowledge infrastructure capability. That is, these scholars paid less attention to the aspect of knowledge infrastructure capability that refers to organisational structure, culture, technology and supportive organisational systems.

In fact, several studies have placed great attention to identifying organizational factors, such as organizational structure, culture, technology infrastructure and employee reward system, that lead to the effective development of CKM capability. For example, Quintas et al. (1997) viewed knowledge management capability as multi-constructs including knowledge infrastructure capability (i.e., organizational structure, technology, culture and employee reward system) and knowledge process capability (i.e., knowledge capture, integration, access, dissemination and application). They highlighted the significance of organisational structure that can facilitate the growth of communities of practice, the encouragement for employees to interact and discuss their work with people in other workgroups, and the use of organisational technology for knowledge acquisition, representation and discovery, decision support, data mining and knowledge dissemination. This is in line with Alavi and Leidner (1999), who asserted that knowledge management capability is inherently information-based, technology based and culture-based capabilities of an organisation. Similarly, Campbell (2003) conceptualized customer knowledge capability as being composed of four organisational processes, including the customer information process, marketing-IT (i.e., information technology) interface, senior management involvement and employee evaluation and reward system. Specifically, the customer information process refers to an organisational process that generates customer knowledge, whereas the other three components are organisational processes that integrate customer knowledge throughout the organisation. Comparatively, Campbell (2003) extended the scope of customer knowledge capability to include senior management involvement and employee evaluation and reward systems, which provide a setting conducive to generating customer knowledge and encouraging employees to interact with each other to share customer knowledge. These four dimensions of customer knowledge capability are

briefly explained as below:

- Customer information process refers to the set of behavioural activities that generate customer knowledge pertaining to customers' needs. It consists of two sequential aspects, i.e. customer data acquisition and interpretation, which transform the data into customer information. This is similar to the knowledge processes capability that emphasizes on converting knowledge into a useful form, applying or using it and protecting it.
- Marketing-IT interface refers to the process by which marketing and IT functions communicate and cooperate with each other. Its objective is to make two different departments share the same goals or tasks. Marketing-IT interface is consistent with Minna and Aino's (2005)'s notion of supportive IT system which focuses on developing channels and platforms for knowledge generation and sharing within an organisation and between an organisation and its customers.
- Senior management involvement refers to the process by which top management signals its support for the generation and integration of knowledge within the firm. It plays a key role in shaping an organisational behavioural activity and in providing a setting that is conducive to the process of customer knowledge generation.
- Employee evaluation and reward system refers to the process by which employee behaviour is aligned to the firm's goals of generating and integrating customer knowledge into the firm's marketing strategies. It focuses on promoting internal team-based incentives based on concrete behaviours for employees to improve their customer-focused performance.

Quintas et al. (1997) and Campbell (2003) expanded the scope of CKM capability from the successive knowledge processes, e.g. capture, integration, access, dissemination and use, to a comprehensive organisational processes and operations, e.g. knowledge-oriented organisational culture, structure, technology and employee reward systems. Disappointingly, the detailed explanation to the operational contents of these processes is insufficient. In addition, Minna and Aino (2005) stated that CKM capability should concern five areas, including: 1) inter-functional cooperation, 2) supportive organisational systems, 3) cooperation with customers, 4) supportive IT systems and 5) organisational culture. These five areas are described as below:

- Inter-functional cooperation (i.e., organisational structure) focuses on activating cooperation among different departments in an organisation for effectively managing customer knowledge. As customer knowledge is generated and disseminated within the formal and informal meetings and the discussions among employees from different departments, it should be available everywhere and to everyone in an organisation dealing with customers and everyone who uses customer knowledge in decision making.
- Supportive organisational system includes senior management support and employee reward systems. It functions an important role in communicating the value of customer knowledge for an organisation and encouraging employees to capture customer data and, moreover, share it with each other and use it.
- Cooperation with customers focuses on gaining knowledge from customers (e.g., customer experience and knowledge about a firm's products and services) and activating customers to get involved in businesses. The point

is to establish a co-creative environment for building and developing long-term customer relationships.

- Supportive IT system refers to channels and platforms for knowledge generation and sharing within an organisation and between an organisation and its customers.
- Organisational culture that supports organisational learning and customer orientation can be seen as a platform for customer knowledge management capability.

According to Sarvary (1999) and Kakabadse et al. (2005), the core of CKM capability should include a good IT infrastructure, organisational structure, culture, appropriate incentive schemes and most importantly the internal rules that govern these processes. Additionally, Davenport and Prusak (1997) proposed several conceptual factors that were common, but vital to the development of knowledge management capability. These factors are described respectively as below:

- A knowledge-oriented culture refers to a positive orientation to knowledge, the absence of knowledge inhibitors in the culture and the knowledge management project type fits the culture. The goal is to encourage employees to be more active in their knowledge exploring, creating and sharing activities.
- Technology infrastructure and organisational infrastructure. The former means a wide range of IT-based infrastructure and the latter means establishing a set of roles, organisational structures and skills from which individual projects can benefit.

- Senior management support focuses on transforming knowledge for improving the individual function or processes. Its significance is to send out messages that knowledge management and organisational learning are critical to the organisational success, to clear the way, to provide funding for infrastructure and to clarify what type of knowledge is most important to the firm.
- Nontrivial motivational aids to motivate employees to create, share and use knowledge through long-term motivational aids or incentives.
- Multiple channels for knowledge transfer inside and outside organization.

Davenport and Prusak (1997) proposed a comprehensive principle for developing knowledge management capability which has covered both scopes of knowledge infrastructure capability, i.e. organisational structure, culture, technology and senior management support, and knowledge processes capability, i.e. knowledge collection, integration, access and application, though the specific measures to conceptualise these capabilities are still scanty. By contrast, Gold et al.'s (2001) empirical evidence provided a concrete insight into what knowledge management capability is and its impact on firm performance. Two key aspects of this capability include knowledge infrastructure capability that is related to organisational technology, structure and culture, and knowledge processes capability that refers to acquire knowledge, convert it into useful form, apply and protect it. In the following are brief explanations for it:

- Organisational technology is mainly used to integrate fragmented flows of information and knowledge and to eliminate barriers to communication between different parts of the organisation. The goal aims to allow

individuals within the organisation to collaborate, create knowledge, effectively track sources of knowledge about its customers, partners, employees or suppliers, and use it.

- Organisational structures should be designed for flexibility to encourage sharing and collaboration across boundaries within the organisation and across the supply chain.
- Organisational culture focuses on motivating dialogue between individuals or groups, encouraging employee interaction both formally and informally. This helps transmitting tacit knowledge between individuals, converting tacit knowledge into explicit knowledge and transforming it from individual to organisational level.
- Knowledge acquisition refers to a firm's ability to acquire, seek, generate, create, capture and collaborate knowledge. All of these terms mean a common theme - the accumulation of knowledge.
- Knowledge conversion is oriented toward making existing knowledge useful. It refers to a firm's ability to organize, integrate, combine, structure, coordinate and distribute knowledge.
- Knowledge application is those oriented toward the actual use of the knowledge. It includes storage, retrieval, application, contribution and sharing knowledge.
- Knowledge security is those designed to protect the knowledge within an organisation from illegal or inappropriate use or theft.

As illustrated in Table 2.6, an accepted consensus shows that customer knowledge management capability is viewed as a multi-dimensional constructs, thought the number

and the nature of the variables the scholars used are varied. It comprises knowledge infrastructure capability that reflects knowledge capability facilitated by organisational structure, technology infrastructure, culture and supportive systems, and knowledge process capability that mirrors knowledge capability in acquisition, conversion, application and protection. Overall, drawing on the idea of Gold et al. (2001), Campbell (2003) and Minna and Aino (2005), this thesis defined CKM capability as organisational customer-relating capability that is concerned with both knowledge infrastructure capability and knowledge process capability. In the following section, the key dimensions of CKM capability are discussed in more detailed, respectively.

Knowledge Infrastructure Capability

Organisational factors, such as culture, structure, technology and supportive system and incentives, have been deemed as key components of knowledge infrastructure capability. In the following section these organisational factors are discussed individually.

Organisational Structure

Organisational structure refers to the development of structure that facilitates the growth of communities of practice (Quintas et al., 1997), or the presence of norms and trust mechanisms (Gold et al., 2001), or a set of roles, organisational structures and skills from which individual projects can benefit (Davenport and Prusak, 1997). It focuses on the transfer mechanisms, such as technology, work processes and people networks, to ensure that best practices flow throughout the firm (Bose, 2004). Knowledge value escalates through dissemination and sharing throughout the organisation as knowledge

is integrated across it (Wells et al., 1999). Therefore, firms should develop sound mechanisms for breaking down the barriers between internal groups and divisions and sharing knowledge to facilitate concerted actions by different departments (Sin et al., 2005; Wayland and Cole, 1997). From the perspective of organisational structure, the sharing of knowledge has been developed as an important way of fostering collaboration and knowledge generation within organisations (Garcia-Murillo and Annabi, 2002). By encouraging employees who are in the different departments to share the same goals or tasks and to interact with each other, it can increase the potential for creativity of knowledge (Campbell, 2003). In short, organisational structure needs to be flexible and reconstructed to improve coordination of cross-functional teams for fostering the dissemination of knowledge.

Organisational Culture

Organisational culture is the combination of shared history, expectations, unwritten rules and social mores that affect all employees' behaviour (Bose, 2004), or the pattern of shared values and beliefs that gives the members of an organisation meaning and provides them with the rules for behaviour (Davis, 1984). In the context of CRM, organisational knowledge-oriented culture is the deeply embedded values and beliefs that encourage cross-functional sharing of information and knowledge appreciation and guide organisational attitude toward to the implementation of knowledge processes (Plakoyiannaki and Tzokas, 2002; Jayachandran et al., 2005; Sigala, 2006). It should be communicated in a way that makes sure that all employees know and accept the concept and the importance of CKM capability (Gold et al., 2001). Therefore, a firm needs to establish a continual organisational learning culture and environment to acquire and

effectively utilize customer knowledge to foster long-term relationships (Bose, 2004; Minna and Aino, 2005).

Organisational Technology

Organisational technology refers to channels and platforms for knowledge generation and sharing within an organisation and between an organisation and its customers (Minna and Aino, 2005), or a set of tangible, shared, physical IT resources (Chen and Ching, 2004), or a uniform set of technologies for computing and communications (Davenport and Prusak, 1997). It emphasizes the technology enabled ties that exist within the organisation to create operational, analytical and collaborative knowledge in order to provide effective decision-making for improving customer services (Chen and Ching, 2004; Gold et al., 2001; Croteau and Li, 2003; Teece, 1998).

Organisational Supportive System and Incentives

Organisational supportive system and incentives include senior management support and employee reward system. Senior management support refers to the extent to which CKM capability is promoted by the top management in an organisation (Croteau and Li, 2003). Senior management support plays a key role in shaping an organisational behavioural activity, i.e. clarifying organisational knowledge learning, and in creating an environment, i.e. providing funding for infrastructure, conducive to the behavioural processes of knowledge generation (Davenport and Prusak, 1997; Lesser et al., 2000).

Employee reward system induces behaviours within organisations through the provision of incentives (Campbell, 2003) and thus should be designed to encourage employees' behaviours consistent with a customer relationship-oriented culture (Jayachandran et al., 2005). Because the knowledge in organisational settings usually resides within the individual employees and does not emerge or flow easily, employee reward systems can provide direct motivation for them to adopt new attitudes and behaviours in harmony with a CRM orientation (Yim et al., 2004) and thus activate individual employees' knowledge significantly to enhance the organisational ability to solve problems and create new knowledge (Cross and Baird, 2000; Davenport and Prusak, 1997; Pathirate et al., 2007). As Day (2003) states, potentially useful information is always held closely by the employee who knows customers and his history, vulnerabilities and requirements. Without employee reward incentive, this kind of information is unlikely to be converted into knowledge that can be shared by other teams and functions. Finally, employee reward systems also determine the channels from which knowledge is accessed, structured and flows so that employees are motivated and rewarded for taking the time to generate new knowledge, share their knowledge and help others outside their own divisions or functions (gold et al., 2001).

Knowledge Processes Capability

Knowledge processes capability is identified in different aspects: create and capture, refine and store and manage and disseminate (Bose, 2004); capture, transfer and use (Delong, 1997; Bose and Sugumaran, 2003); acquire, collaborate, integrate, experiment (Leonard, 1995); identify and exploit (Quintas et al., 1997); create, transfer, assemble, integrate and exploit (Teece, 1998); capture, create, develop and apply (Davenport and

Prusak, 1997); build, generate and leverage (Wayland and Cole, 1997); acquisition and transformation (Campbell, 2003), capture, integration, access and use (Jayachandran et al., 2005). According to Gold et al. (2001), these various characteristics can be grouped into four constructs of process capability for firms to manage internal and external knowledge: acquiring knowledge, converting it into useful form, applying or using it and protecting it. In the following knowledge process capability is discussed in terms of knowledge acquisition, conversion, application and protection.

Knowledge Acquisition

Knowledge acquisition emphasizes the capture of knowledge on an ongoing basis from various sources (Jayachandran et al., 2005). It also means to seek and acquire entirely new knowledge, or create new knowledge out of existing knowledge through collaboration between individuals and between business partners.

Knowledge Conversion

Knowledge conversion means making existing knowledge useful. A firm should have the ability to convert knowledge into useful form and makes it easier to access and distribute it within the organisation through organizing and structuring knowledge (Gold et al., 2001).

Knowledge Application

Knowledge application means the actual use of the knowledge, including effective knowledge storage, retrieval and sharing for quick and easy access (Gold et al., 2001). A firm should use knowledge to undertake actions that are consistent with the needs of CRM (Jayachandran et al., 2005). For example, customers may interact with various functional areas within organisations. Thus, providing relevant employees with access to updated and integrated customer knowledge should be a priority for firms practicing CRM (Jayachandran et al., 2005).

Knowledge Protection

Knowledge protection means protecting the knowledge within an organisation from illegal or inappropriate use or theft. According to Gold et al. (2001), part of the protection mechanism should be built into the technology infrastructure and others can be established that govern the behaviour and conduct of employees and align incentives. Particularly with the popularity of the Internet, many customers are concerned about how it is being used (Winer, 2001). Therefore, accepted security standards need to be implemented to create customer confidence (Körner and Zimmermann, 2000).

In conclusion, consistent with the above scholars who adopted the perspective of CKM capability from many possible domains without only focusing on a particular one, this thesis attempts to employ CKM capability as a multi-dimensional construct, reflecting the nature of CKM capability widely accepted within the literature.

2.6.3 Customer Interaction

Customer interaction refers to any instance in which customers and firms, which have the ability to exert influence upon each other, engage in the exchange of value (Shostack, 1985; Zablah et al., 2004). It has been a key driver of relationship commitment (Grönroos, 2004; Kim et al., 2003; Sharma and Patterson, 1999; Wortzel 1987) and an important determinant of the customer value and customer satisfaction (Denning, 2011; Pavicic et al., 2011; Soloman et al 1985; Su et al., 2006; Xu and Walton 2005; Zablah et al., 2004).

Customer interaction has been the core of CRM and developed as one key construct in services marketing (Grönroos, 2004). Numerous scholars have highlighted its nature and significance in CRM (Gebert et al., 2003; Kim et al., 2003; Körner and Zimmermann, 2000; Mack et al., 2005; Peppers and Rogers, 2011; Payne and Frow, 2005; Peelen, 2005; Rootman et al., 2007; Sigala, 2006; Wells et al., 1999; Wang and Feng, 2012; Xu and Walton 2005; Zablah et al., 2004). For example, Körner and Zimmermann (2000) focused on the role of customer interaction in the contents of interaction and the offered interaction channels to create added value for the customer. Similarly, Payne and Frow (2004, 2005) regarded it as providing appropriate combinations of interaction channels to use and create positive customer experiences, including physical contact (i.e., sales force, outlets and telephony) and virtual contact (i.e., e-commerce and m-commerce). Körner and Zimmermann (2000) and Payne and Frow (2004, 2005) highlighted the significance of selecting and organising the offered channels and the contents of communication. According to Kim et al. (2003) and Peelen (2005), customer interaction represents operational excellence and multichannel

management of customer services and management processes to create superior value and satisfaction for customers. Zablah et al. (2004) stressed its role in enhancing the quality of individual exchange episodes over the course of a relationship's life cycle, i.e. the exchange of core benefits, information exchange and social exchange, to drive customer value and organisational long-term return. They proposed consistency, relevance and appropriateness as the key elements of interaction quality, whereas the operationalisation of interactions quality is conceptually descriptive and unclear. By contrast, Peppers and Rogers (2011) proposed several practices to evaluate the achievement of customer interaction, e.g. keeping and initiating more dialogues with the customer, utilizing IT to make doing business easier, using incoming call as selling opportunities and evaluating the voice response unit at customer information centre.

Customer interaction enables firms to learn more about customers and determine how to respond and send appropriate content back to them (Doyle, 2001; Teo et al., 2006; Garcia-Murillo and Annabi, 2002). The customer relationship proceeds if an interaction is occurred in a satisfied way (Wells et al., 1999). Therefore, customer interaction should no longer be treated as discrete events; rather, it reflects an ongoing relationship (Dwyer et al, 1987). According to Denning (2011) and Pavicic et al (2011), it should involve a set of multichannel functions that enable the firms to achieve an optimum of customer value which leads to delight customers. Accordingly, with the goal of this thesis, the selection and the organisation of the multi-channels channels and the contents of communication is selected as two key dimensions of customer interaction to develop its measures used in the proposed research model.

2.6.4 Customization

In today's competitive environment, customers expect and demand the flexibility and the customization in firms' offerings (Bitner et al., 2000). Numerous studies have revealed that firms should develop the capability of customizing their products and services to treat customers as individuals as possible for building a long-term relationship with customers (Buttle, 2010; Lin et al., 2009; Mack et al., 2005; Peelen, 2005; Peppard, 2000; Peppers and Rogers, 2011; Sigala, 2006; Winer, 2001; Sin et al., 2005). Customization has become increasingly important especially when there is heterogeneity in market demands and competition from other service firms (Wang et al., 2010). Firms can build an especially strong bond with customers through customization, leading to higher level of customer retention (Lovelock and Wirtz, 2004). Indeed, many firms have been restructuring their entire value chain to allow for customization which is viewed as a potential source of competitive advantage. In the following, the nature of customization and the difference between customization and personalization will be discussed individually. Finally, a summary is presented.

2.6.4.1 The Nature of Customization

Though there is consensus on the importance of customization in CRM, there is an equal confusion over what customization truly is. According to Duray et al. (2000), customization is defined as "customer's involvement in the production cycle (i.e., design, fabrication, assembly, delivery and use)" (p. 608). The customer's involvement determines the relative degree of customization which allows customers to customize products and services to fit their particular demands. On the other hand, the degree of

customization depends on the various points in the production cycle, ranging from the simple adaptation of delivered products up to the total customization of products (Sigala, 2006).

With the advances in IT, firms have more ability to embrace mass customization (MC) in an attempt to provide unique value to their customers (Gilmore and Pine, 1997). The term "MC" was first coined by Davis (1987), who described it as a trend that firms try to provide customers with unique offerings. Pine (1993) viewed MC as a new competitive strategy compared to mass production and brought it into the production and operations management area. Later, Pine et al. (1995) defined MC as "manufacturing products or delivering services in response to a particular customer's needs and preferences" (p. 103). Hart (1995) defined MC concept by using two distinct definitions. In visionary definition, it is defined as "the ability to provide customers with anything they want profitably, any time they want it, anywhere they want it and any way they want it", while in practical definition, it is "the use of flexible processes and organisational structures to produce varied and individually customized products and services at the low cost of a standardized, mass-production system" (p. 36). That is, MC refers to the organisational ability to quickly produce and deliver large volume of customized products that meet specific customers' needs at a cost comparable to non-customized ones (Kotler, 1997; Lau, 1995). Similarly, McCarthy (2004) defined MC as "the capability to manufacture a relatively high volume of product for a relative large market that demands customization, without tradeoffs in cost, delivery and quality" (p. 348). Here, the term "mass" both implies and defines that a relatively high volume of products is produced for a mass market (McCarthy, 2004). This is in line with Buttle (2010), who stated that MC is the use of flexible processes and

organisational structures to create varied and even customised value propositions for individual customers at a mass or segment level, with neither a cost nor a lead time penalty.

As to the way of customisation, Pine (1993) suggested five stages of modular production: customized services (i.e., standard products are tailored by people in marketing and delivery before they reach customers), embedded customization (i.e., standard products can be altered by customers during use), point-of-delivery customization (i.e., additional custom work can be done at the point of sale), providing quick response (i.e., short time delivery of products) and modular production (i.e., standard components can be configured in a wide variety of products and services). Later, Pine et al. (1995) and Gilmore and Pine (1997) distinguished four customization levels based on empirical observation and illustrated how firms uses them to deliver great customer value:

- Collaborative customization (i.e., designers in dialogue with customers) conducts a dialogue with individual customers to help them articulate their needs, to identify the precise offering that fulfils those needs and to make customized products for them.
- Adaptive customization (i.e., standard products can be altered by customers during use) offers one standard, but customizable product that is designed so that users can alter it themselves.
- Cosmetic customization (i.e., standard products are packaged specially for each customer) presents a standard product differently to different customers.

- Transparent customization (i.e., products are adapted to individual needs) provides individual customers with unique products or services without letting them know explicitly that those products and services have been customized for them.

According to Pine et al. (1995) and Gilmore and Pine (1997), collaborative customization is appropriate when customers are not clear what they want and grow frustrated when forced to select from a plethora of options, whereas adaptive customization is suitable for customers who want products or services to perform in different ways on different occasions; cosmetic customization is proper when customers use products or services the same way and differ only in how they want it presented; transparent customization is used when customers' specific needs are predictable or can easily be deduced. Similarly, Spira (1996) developed a framework with four types of customization, including customized packaging, customized services, additional custom work and modular assembly. Based on the review above, the majority of studies mainly paid their attention to investigating the operational and technological capabilities of MC, specifically in the manufacturing sector. By contrast, the studies of MC in the service marketing are scant, while MC is a key element of CRM.

2.6.4.2 Customization verse Personalization

Customization and personalization are viewed as the most widely accepted and applied methods to provide customers unique experiences (Coner, 2003). Although these two terms are used interchangeably, complement each other and are often inseparable, there are differences between them. Coner (2003) differentiated personalization and

customization from the concepts of “matching” and “involvement” within the context of e-commerce. Personalization focuses on a match of categorized content to profiled users, whereas customization provides the user with more ability to actively dictate the information on the site. Namely, customization has a higher involvement of active user who influences the degree of customization to provide individually tailored products and services according to his preferences with regard to form, time, place and price (Gordon, 1998; Huang and Lin, 2005). Furthermore, Huang and Lin (2005) stressed that customization is tailoring to customers needs based on customers requests, whereas personalization is to anticipate or predict customers needs based on what personalization provider already knows about the customers. This is similar to the Personalization Consortium’s view (http://www.personalization.org) that personalization is to better serve the customer by anticipating needs.

2.6.4.3 Summary

According to Comstock et al. (2004), customization is a matter of perspective that need not be limited to the customization of hardware by the manufacturer - it can be viewed to include customization in software, services and even packaging of products. Consequently, this thesis could give customization a general definition: manufacturing a product or delivering a service in response to individual customer’s needs. Note that although the emphasis is on “individual”, it is up to the firms to decide how finely they want to segment their market.

2.7 Customer Value

To specify the concept of customer value used in this thesis, this section is structured as follows. Section 2.7.1 provides an overview of literature on the nature of customer value. Section 2.7.2 discusses the key dimensions of customer value that have been identified and operationalized in the literature. Finally, a summary is discussed in section 2.7.3.

2.7.1 The Nature of Customer Value

Customer value is viewed as the heart of all marketing activities (Kotler et al., 2008; Slater and Narver, 2000; Tzokas and Saren, 1999) and the core of CRM (Boulding et al., 2005; Payne and Frow, 2005). As Albrecht (1992) stated, the only thing that matters in the business world is delivering superior value to customer. Indeed, the role of marketing is "to assist the firm to create value for its customers that is superior to competition" (Tzokas and Saren, 1999, p. 53). In the customer-centred era, delivering superior customer value has been the source of competitive advantage (Coltman, 2007; Eggert and Ulaga, 2002; Payne and Holt, 2001; Ravald and Grönroos, 1996; Slater and Narver, 2000) and a strategic weapon in attracting and retaining customers to achieve profitable growth (Day and Moorman, 2010; La and Kandampully, 2004; Lin et al., 2009; Martin, 2010). Therefore, a firm's offering should be seen as a "value carrier" which customers perceive offers a greater net-value than the offerings of the competitors (Ravald and Grönroos, 1996).

The concept of customer value has been used in a variety of contexts and its meaning may be diverse in different context (Huber et al., 2001; Eggert and Ulaga, 2002; Sweeney and Soutar, 2001; Ulaga and Chacour, 2001). A fundamental basis for defining it was proposed by Zeithaml (1988, p. 13), who identified four diverse meanings of value of a service: 1) value is low price, 2) value is whatever one wants in a product, 3) value is the quality that the consumer receives for the price paid and 4) value is what the consumer gets for what they give. Zeithaml's (1988) fourth definition has gained huge attention from the majority of past studies. As summarized in Table 2.7, there is a key core concept that is commonly used as a fundamental basis for defining customer value: the notion of "trade-off" and "benefits and sacrifices". This interpretation involves a trade-off between what customers benefit (i.e., quality, benefits and utilities) and what they sacrifice (i.e., price, opportunity cost and maintenance and learning cost) in a firm's offering (Woodruff, 1997; Zeithaml, 1988; Sweeney and Soutar, 2001; Eggert and Ulaga, 2002). That is, customer value is created when the benefits to the customer associated with a product or a service exceed the sacrifices (Slater and Narver, 2000).

Furthermore, value is a subjective concept. Different customers involved in the purchasing process can have different perceptions of a firm's offering (Coltman, 2007; Ulaga and Eggert, 2006). Finally, value is relative to competition. This is based on the assumption that competitive advantage depends on the extent to which firms deliver to the customer what is of value to them (Payne and Holt, 2001; Ravald and Grönroos, 1996; Slater and Narver, 2000; Ulaga and Eggert, 2006; Cravens and Piercy, 2009; Reimann et al., 2010). Therefore, customer value designed to obtain competitive advantage and measured relative to the firm's relevant competitors is more meaningful,

Table 2.7 Perspective of Customer Value

Authors	Definition
Zeithaml (1988)	Customer value reflects four diverse meanings: 1) value is low price, 2) value is whatever one wants in a product, 3) value is the quality that the consumer receives for the price paid and 4) value is what the consumer gets for what they give.
Day (1990)	Customer value represents the difference between customer's perceived benefits and customer's perceived costs.
Woodruff (1997)	Customer value considers what they want and believe that they get from buying and using a seller's product. These perceptions typically involve a trade-off between what the customer receives (e.g., quality, benefits, worth, utilities) and what he or she gives up to acquire and use a product (e.g., price, sacrifices).
Butz and Goodstein (1996)	Customer value means the emotional bond established between a customer and a producer after the customer has used a salient product or service produced by that supplier and found the product to provide an added value.
Ulaga and Eggert (2006)	Customer value as the trade-off between the multiple benefits and sacrifices of a supplier's offering.
Flint et al. (1997)	Customer value can be classified as values, desired values and value judgments. The notion of value judgment is the customer's assessment of what has happened (benefits and sacrifices). This implies that value is a process of interpretation of what the customer feels concerning the product or service consumed, relative to the sacrifices (generally price or time).
Normann and Ramirez (1993)	Customer value is a level of return in the product benefits for a customer's payment in a purchase exchange.
Monore (1990)	Customer value represents a tradeoff between the quality and benefits they perceive in the product relative to the sacrifice they perceive by paying the price.
Wang et al. (2004)	Customer value is inherent in (or linked to) the use of certain products or services.
Petrick (2002)	Customer perceived value is a comparison of what a consumer "receives," with what the consumer "gives" for the attainment of a product or service.

Source: summarized by the author

because competitors are the standard of comparison in the performance scale (Matsuno et al., 2002; Ulaga and Eggert, 2006). Specifically, as the firm offers greater net-value to their customers than competitors' offerings, a sustainable competitive advantage is achieved (Narver and Slater, 1990; Ravald and Grönroos, 1996). Consequently, this is important because taken in isolation, a firm's performance, whether strong or weak, contains only limited meaning (Coltman, 2007).

2.7.2 Dimensions of Customer Value

Several scholars have focused their efforts on the conceptualization of the dimensions of customer value. A broader theoretical framework of a multi-dimensional measure of customer value was proposed by Sheth et al. (1991). This study provides a strong foundation to build a customer value scale, including functional value, social value, emotional value, epistemic value and conditional value. Of the five values functional value was viewed as the primary driver of consumer choice. By contrast, Sweeney and Soutar (2001) did not consider the epistemic and conditional constructs to be important and thus proposed another multi-dimensional scale called PERVAL. The PERVAL emphasizes functional value in terms of quality and price, emotional value in terms of enjoyment derived from product and social value in terms of social consequences of what the product communicates to others. Here, quality refers to the utility derived from the product and price is operationalized as the utility derived from the product due to the cost reduction; emotional value means the utility derived from the feelings a product generates; and social value is viewed as utility derived from the product's ability to enhance social self-concept. Unlike Sheth et al. (1991) and Sweeney and Soutar (2001), who focused on the value of a product, Petrick (2002) centred on the development of the

scale for measuring the value of a service. He viewed customer value as a multi-dimensional construct based on the constructs of what a customer receives from the purchase of a service and the constructs related to what is given. The former include the emotional response to the service, quality received from the service and the reputation of the service rendered, while the later consist of monetary price and behavioural (non-monetary) price. Similarly, Roig et al. (2006) defined customer value as the aspects of function value (i.e., relative to the establishment (installations), the contact personnel, quality and price), emotional value and social value. As outlined in Table 2.8, customer value can be viewed as a multi-dimensional construct mainly comprising three constructs of functional value, emotional value and social value, though epistemic value and conditional value were proposed by Sheth et al. (1991). Functional value refers to the utility derived from the products and services due to the reduction of price and the utility derived from the quality of product and service; social value refers to the reputation derived from the product and service's ability to enhance social self-concept, as perceived by the customers based on the image of the firms; emotional value refers to the utility derived from the feelings or affective states that the product and service generates to the customer.

Table 2.8 Important Studies of Key Dimensions of Customer Value

Scholars	Dimensions of customer value	FV	SV	EV	EV	CV	Industry
Sheth et al. (1991, p. 160-162)	Customer value includes functional value, social value, emotional value, epistemic value and conditional value. Functional value refers to the perceived utility acquired from an alternative's capacity for functional, utilitarian, or physical performance. Social value refers to the perceived utility acquired from an alternative's association with one or more specific social groups. Emotional value refers to the perceived utility acquired from an alternative's capacity to arouse feelings or affective states. Epistemic value refers to the perceived utility acquired from an alternative's capacity to arouse curiosity, provide novelty and/or satisfy a desire for knowledge. Conditional value refers to the perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker.	✓	✓	✓	✓	✓	Cigarettes
Sweeney and Soutar (2001, p. 211)	Emotional value refers the utility derived from the feelings or affective states that a product generates; social value (enhancement of social self-concept) was operationalized as the utility derived from the product's ability to enhance social self-concept; functional value (price/value for money) means the utility derived from the product due to the reduction of its perceived short term and longer term costs; functional value (quality/performance) is viewed as the utility derived from the perceived quality and expected performance of product.	✓	✓	✓			Durable goods
Petrick (2002, p. 125)	Customer value is a priori conceptualized as a multi-dimensional construct, including the constructs of quality, emotional response, monetary price, behavioural price and reputation. Quality is defined as a consumer's judgment about a product or service's overall excellence or superiority; emotional response is defined as a descriptive judgment regarding the pleasure that a product or service gives the purchaser; the definition utilized for monetary price is the price of a service as encoded by the consumer; behavioural price is defined as the price (non-monetary) of obtaining a service, which includes the time and effort, used to search for the service; reputation is defined as the prestige or status of a product or service, as perceived by the purchaser, based on the image of the supplier	✓	✓	✓			Tourism sector
Roig et al. (2006, p. 266)	Customer value is a multidimensional formative construct made up of six constructs; Four of them correspond to constructs of function value: functional value of the establishment (installations), functional value of the contact personnel (professionalism), functional value of the service purchased (quality) and functional value price, the two remaining constructs refer to the affective construct of perceived value, made up of emotional value and social value.	✓	✓	✓			Banking sector
Sánchez et al. (2006, p. 394)	Customer value is grouped into six constructs: functional value of the travel agency (installations); functional value of the contact personnel of the travel agency (professionalism); functional value of the tourism package purchased (quality); functional value price; emotional value; social value.	✓	✓	✓			Tourism sector

FV: Functional Value; SV: Social Value; EV: Emotional Value; EV: Epistemic Value; CV: Conditional Value

✓**:** means the construct from the author's research

Source: summarized by the author

2.7.3 Summary

According to the majority of previous studies above, it is accepted that customer value is operationalized in terms of functional value, emotional value and social value. Furthermore, it was mainly perceived by customers, but rare study sought to achieve a dyadic perspective (i.e., customer value is evaluated simultaneously by both the internal firm's perception and the external customer's perception) in a single study. As these perspectives would be expected to differ, the gap might arise between them. Therefore, this thesis also seeks to examine whether CRM's effect on customer value as seen by firms coincide with those perceived by customers.

2.8 Customer Satisfaction

Customer satisfaction has been widely regarded as the core of RM and CRM (Kotler et al., 2008; Cravens and Piercy, 2009; Capraro et al., 2003; Christopher et al., 1991; Grönroos, 1994; Roberts et al., 2003) and a key indicator for every firm wishing to increase customer loyalty and future profits (Anderson and Sullivan, 1993; Fornell et al., 2010; Liljander and Strandvik, 1995; Grönholdt et al., 2000; Ulaga and Eggert, 2006; Lin et al., 2009). Not only can it be viewed as an important outcome of long-term continuation of relationship, but a key measure for diagnosing CRM (Battor and Battor, 2010; Croteau and Li, 2003; Jayachandran et al., 2005; Kim and Cha, 2002; Mithas et al., 2005; Reimann et al., 2010; Sin et al., 2005). According to Grönroos (1994), a firm (e.g., a service firm) that employs the relationship-based marketing should monitor customer satisfaction as an important outcome.

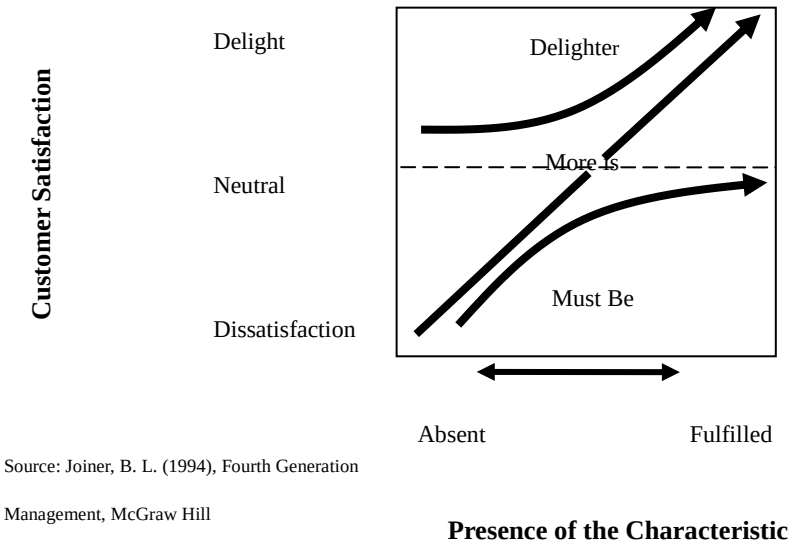
The significance of customer satisfaction was revealed in the publications of Fornell (1992), Anderson et al. (1994), Fornell et al. (1996), Fornell et al. (2006) and Fornell et al. (2010), who used a national customer satisfaction index (i.e., Swedish Customer Satisfaction Barometer (SCSB) or American Customer Satisfaction Index (ACSI)) to examine its impact on business performance, e.g. market share, profitability, customer complaints, loyalty, stock prices and consumer spending growth. Empirical evidence has contributed to understand the role of customer satisfaction in business performance. For instance, Fornell's (1992) SCSB model showed the influence of customer satisfaction on market share, indicating that customer satisfaction should be lower in industries where supply is homogeneous and demand heterogeneous, but be higher when the heterogeneity and homogeneity of demand is matched by the supply. The finding of Anderson et al. (1994) supported a positive impact of quality on customer satisfaction and in turn, firm profitability, demonstrating the economic benefits of increasing customer satisfaction. Similarly, the ACSI is a national economic indicator, which was similar SCSB and set up in October 1994, to measure customer satisfaction across a wide range of goods and services in seven major economic sectors in U.S. Fornell et al.'s (1996) ACSI model, for example, linked a chain of relationships running from the antecedents of customer satisfaction - expectations, perceived quality and value - to the consequences of customer satisfaction - voice and loyalty. Highlights of the empirical finding indicated that customisation is more important than reliability in determining customer satisfaction and that customer satisfaction is more quality-driven than price-driven. Later, Fornell et al. (2006) reported a positive and significant relationship between ACSI and stock market value of equity. Moreover, Fornell et al.'s (2010) findings indicated that customer satisfaction has a significant and positive impact on future consumer spending. The ACSI model has shown a powerful and important

correlation between customer satisfaction and business performance.

In addition, in managing the customer relationship, the linkage between customer satisfaction and customer loyalty was always discussed widely. Some argued that customer satisfaction reflects how well a firm is serving its customer and tells what percentage of customers stay loyal and for how long. According to Reichheld (1993), between 65% and 85% of customers who defect say they were satisfied or very satisfied with their previous supplier. The finding of Jones and Sasser (1995) showed that the relationship between satisfaction and customer loyalty is neither linear nor simple. However, even though the link between customer satisfaction and customer loyalty is not so straightforward and thus challenged, customer satisfaction as a strong predictor for customer loyalty is widely accepted among researchers.

Further, Denning (2011) emphasised that firms' survival depends not merely on satisfying customers but on delighting customers, meaning what emotions and feelings the firm's offerings cause. Joiner (1994) (as cited in Hartley and Starkey, 1996) explained that Kano's model of customer perception helps to separate characteristics which cause dissatisfaction, satisfaction and delight, to explain the relationship between customer satisfaction and customer perception (see Figure 2.3). The "Must be" are those characteristics that customers expect to be fulfilled. The absence of any of these characteristics will cause annoyance, but presence will do up to a neutral level. For "More is better" the response may range from dissatisfaction, through neutral to delight. For "Delighters", if they are absent there is no negative effect, but presence does have a positive effect. To retain customers, firms must strive to find new ways to continue to delight them. According to Denning (2011), customer delight is the new bottom line

of business and outside-in innovation to delight the customer can bring firm profit. Therefore, Net Promoter Score (NPS), a robust methodology for measuring customer delight, is used to link customer experience to business growth. NPS uses systematically a single survey question, "How likely is it that you would recommend this product (or service or firm) to a colleague or friend?" on an 11 point scale, to measure the extent of customer delight both in absolute terms and relative to the firm's competitors. By calculating the percentage of "promoters" (scores of 9 or 10) minus the "detractors" (scores of 0 to 6) while ignoring the "positive passives" (scores of 7-8), a firm can measure and manage customer delight. NPS results reflect close relationships with customer behavior and business results. Therefore, the best way for firm to grow is to have more promoters (e.g., open advocacy of a product, service or organization) than detractors (e.g., negative word of mouth).



Source: Joiner, B. L. (1994), Fourth Generation Management, McGraw Hill

Figure 2.3 Kano's Model of Customer Perceptions

Customer satisfaction research has been generally viewed within the expectation-disconfirmation paradigm (Fornell, 1999; Churchill and Surprenant, 1982; Oliver, 1981; Parasuraman et al., 1988). This paradigm treats customer's feeling of satisfaction as the outcome of a comparison process between comparison standard (i.e., expectation) and perceived performance. A customer is satisfied when his perceived performance of a firm' offering is equal to or higher than expectation and if the offering's performance is less than the expectation, a customer will be dissatisfied. The first outcome can be considered as a positive confirmation, while the second outcome is as a negative disconfirmation.

Customer satisfaction is viewed as an affective state of mind. According to Crosby et al. (1990), it is the summary measure that provides an evaluation of quality of all past interaction experiences with the service provider. Similarly, Anderson and Narus (1990) defined it as a positive affective state resulting from an over appraisal of a firm's relationship. Satisfaction is an important outcome of relationship which leads to the long-term continuation of relationships. Although their studies were discussed in Business-to-Business context, it has also been incorporated in subsequent research in Business-to-Customer market. On the other hand, customer satisfaction also presents a cognitive process comparing perceived performance with comparison standard. According to Storback et al. (1994), satisfaction is "the "customer's cognitive and affective evaluation based on their personal experience across all service episodes within the relationship" (p. 25). This was supported by Roberts et al. (2003), who argued that customer satisfaction is a significant measure of relationship quality, implying that an unsatisfied customer could not be expected to have a good relationship with the firm because customer satisfaction is at the core of the exchange relationship.

Customer satisfaction has been conceptualized as an affective evaluative response and as a cumulative effect within the course of a relationship, rather than a satisfaction specified with each transaction. In fact, there are two different conceptualizations of customer satisfaction: transaction-specific satisfaction and cumulative satisfaction (Boulding et al., 1993; Andreassen, 2000; Cronin and Taylor, 1994). The former is a post-choice evaluative judgement of a specific purchase occasion, whereas the latter is an overall evaluation based on the total purchase and consumption experiences with a product and service over time (Oliver, 1981; Selne, 1993; Zeithaml et al., 1988; Fornell et al., 1996). However, cumulative satisfaction is viewed as a more fundamental and useful indicator of the firm's past, present and future performance (Fornell et al., 1996).

According to Reinartz and Kumar (2000), in implementing CRM firms should seek to establish and maintain a long-term customer relationship based on the cumulative customer satisfaction as opposed to transaction-specific one. Therefore, in accordance with the majority of CRM studies being done on the customer satisfaction construct, this thesis views customer satisfaction as an affective state of mind and as a cumulative effect resulting from the appraisal of all relevant aspects of a firm's offerings.

2.9 Customer Loyalty

Over the past several decades, there were considerable discussion about the definition, the conceptualization and the role of customer loyalty in the marketing literature. Customer loyalty has been viewed as one of the fundamental drivers of firm profitability (Reichheld, 1996) and as a crucial performance construct of in evaluating marketing effectiveness, particularly in the field of CRM (Ball et al., 2004). Its

significance lies in the view that loyal customers are more profitable to a firm than new ones, because they are less sensitive to price, buy more and bring in new customers to firms (Berry and Parasuraman, 1991; Bowen and Shoemaker, 1998; Reichheld, 1996; Zeithaml et al., 1988). Also, it is CRM's goal to develop and maintain a customer relationship that can be transformed into customer loyalty, which in turn leads to increase the firm's profits.

Following the above introduction, the section (2.9.1) identifies the conceptualization of customer loyalty using three common approaches used in the relative literature, including behavioural loyalty (section 2.9.1.1), attitudinal loyalty (section 2.9.1.2) and the combination of behavioural and attitudinal loyalty (section 2.9.1.3). This is then followed by section (2.9.2) providing a summary.

2.9.1 Conceptualization of Customer Loyalty

Although there are a wide range of definitions of customer loyalty in the relative literature, there is no universally agreed definition and measure about it (Dick and Basu, 1994; Oliver, 1999; Uncles et al., 2003). Loyalty can be in line with "the loyalty of brand/service/vendor/store" (Dick and Basu, 1994, p. 107) and with the "something that consumers may exhibit to brands, services, stores, product categories and activities" (Uncles et al., 2003, p.295). Customer loyalty in marketing is always reflected by behavioural loyalty, attitudinal loyalty and a combination of behavioural and attitudinal loyalty. In the following section these perspectives are discussed individually.

2.9.1.1 Behavioural Loyalty

Behavioural loyalty first focused on understanding brand loyalty related to goods and later to services in marketing context. From a behavioural perspective, loyalty is defined as repeated transactions over a defined period of time and sometimes is measured by repeat purchasing of products and services, purchasing more and different products and services from the same firm and recommending the firm to others (Day, 1969; Prus and Randall, 1995; Kahn et al., 1986; Ball et al., 2004; DeWulf et al., 2001; Zeithaml et al., 1996). The major assumption of behavioural loyalty is that repeat purchasing could capture the loyalty of a customer towards the brand (Bandyopadhyay and Martell, 2007).

Although the use of a behavioural measure in loyalty research remains popular, it has been criticized in numerous studies (Bloemer and de Ruyter, 1998). This criticism attributed it as lacking a conceptual basis and capturing only the static outcome of a dynamic process (Jacopy and Chestnut, 1978). This is because repeat purchase may reflect situational constraints like the lack of customer choice, preferences and convenience (Dick and Basu, 1994; Hart et al., 1999). As Ball et al. (2004) stated, a focus on behavioural loyalty alone may mask many cases in which customer are loyal for reasons of convenience or habit and may sometimes be switched or churned by a competitor. Consequently, loyalty measure, based on repeat purchase, does not distinguish between true or intentional loyalty and superior loyalty associated with consistent purchasing of one brand (Day, 1969). As a result, behavioural loyalty may not provide a comprehensive insight on the measure of loyalty. Another criticism is that behavioural conceptualization and operationalisation are often inadequate to explain

why and how the loyalty is developed (Jacoby and Chestnut, 1978; Dick and Basu, 1994; Bloemer and de Ruyter, 1998). Consequently, to complement the insufficiency of the behavioural loyalty viewpoint, several studies relative to customer loyalty suggested that attitudinal loyalty should be incorporated into the measure of customer loyalty.

2.9.1.2 Attitudinal Loyalty

Another important perspective of loyalty adopted by scholars is attitudinal loyalty. From an attitudinal perspective, the loyalty is viewed as a specific desire to continue a relationship with a service provider (Czepiel and Glimore, 1987) and a commitment and affect-laden partnership between customers and brands (Fournier and Yau, 1997). This approach is often defined as both positive affect toward the relationship's continuance and the desire to continue to remain in the relationship (Ball et al., 2004).

Attitudinal loyalty is commonly measured by using customers' intention to buy products/services from the same firm, willingness to recommend the firm and commitment to the firm. Shoemaker and Lewis (1999) stated that truly loyal customers are customers who feel so strongly that the firm can best meet their needs and that the firm's competition is virtually excluded from the consideration set. But sometimes customers may be loyal owing to high switching barriers related to technical, economical or psychological factors, which make it costly or difficult for customers to change supplier. Consequently, like the behavioural approach, the attitudinal loyalty also has been criticized, neither reflects the mechanical element of the kind of behaviour that keeps customers, nor provides much about competitive effects, such as multi-brand or shared loyalty (Baloglu, 2002; Riley et al., 2001).

2.9.1.3 Customer Loyalty as a Two-Dimensional Construct

To overcome the shortcoming of using a single construct to measure customer loyalty, numerous scholars viewed customer loyalty as the combination of behavioural and attitudinal loyalty (Day, 1969; Jacopy and Kyner, 1973; Jacoby, 1978; Dick and Basu, 1994). For instance, Day (1969) argued that loyalty should be evaluated from both attitudinal construct and behavioural construct. Jacoby and Chestnut (1978) indicated that it would be inappropriate to measure loyalty just from a behavioural view (e.g., repetitive purchase patterns), suggesting the need to investigate attitudinal elements of the loyalty. Similarly, Dick and Basu (1994) viewed loyalty as an attitude-behaviour relationship in their framework.

As shown in Table 2.9, the definitions and the measures of customer loyalty the authors used reflect divergent perspectives. For example, De Wulf et al. (2001) defined customer loyalty from a behavioural perspective as "a composite measure based on a consumer's purchasing frequency and amount spent at a retailer compared with the amount spent at other retailers from which the consumer buys (p.37)." Similarly, Liang and Wang (2005) viewed it as a behavioural construct though the measure items they used involved an attitudinal perspective. By contrast, Lin et al. (2009) defined customer loyalty from an attitudinal perspective, meaning that loyal customers form a dependence and have a favourable impression on business. In addition, several scholars considered customer loyalty from both attitudinal and behavioural perspectives. For instance, Prus and Randall (1995) employed repeat purchasing of products or services, purchasing more and different products and services from the same firm as the conceptualization of behavioural loyalty, while the intention to buy again and/or buy additional products and

services from the same firm, a willingness to recommend the firm to others and a resistance to switching to a competitor are used to reflect attitudinal loyalty. Jones and Sasser (1996) evaluated customer loyalty from the feelings of attachment to or affection for a firm's people, products and services. The feelings manifest themselves in many forms of customer behaviour, including: intent to repurchase, primary behaviours (e.g., actual repurchasing behaviour, frequency, amount, retention and longevity) and secondary behaviours (e.g., customer referrals, endorsement and spreading the word). Similarly, Kandampully and Suhartanto (2000) measured customer loyalty in terms of repurchase and recommendation to the service provider. Kim and Cha (2002) used share of purchase, relationship continuity and word of mouth to conceptualize customer loyalty in five-star hotels in Taiwan.

Finally, in describing the nature of customer loyalty as the relationship between the relative attitudes towards patronage behaviours, a further discussion was conducted by Dick and Basu (1994), who catalogued four different types of loyalty and conceptualized them as a combination of repeat patronage and relative attitude. These are briefly explained as below:

- Loyalty means customers who signify favorable correspondence between relative attitude and repeat patronage.
- Spurious loyalty means the customer with low relative attitude accompanied with high repeat patronage.
- Latent loyalty means the customer with high relative attitude and low repeat patronage.
- Low loyalty means the customer with low relative attitudes combined with

low repeat patronage.

Similarly, Oliver (1999) proposed a framework of cognitive-affective-conative loyalty with an action phase in which cognitive, affective, conative antecedents of relative attitude are viewed as contributing to loyalty. Though the phase of action loyalty is ideal, there is difficulty in observing and measuring it. Each phase is explained respectively as below:

- Cognitive loyalty refers to brand belief that is preferable its alternatives.
- Affective loyalty represents pleasurable fulfilment that means a liking or attitude towards the brand.
- Conative loyalty implies a brand-specific commitment to repurchase.
- Action loyalty means that customers' intentions are converted to actions.

2.9.2 Summary

Customer loyalty has been reviewed using three common approaches, including behavioural, attitudinal and a composite of behavioural and attitudinal loyalty. However, under the consideration of the research setting of this thesis, customer loyalty is preferably viewed as a combination of behavioural and attitudinal loyalty, rather than loyalty types, to capture its nature in the banking industry in Taiwan.

Table 2.9 Definitions/Measures of Customer Loyalty

Authors	Approach	Definitions/Measures	Context
Hellier et al. (2003, p. 1765)	Behavioural	Defined as the degree to which the customer has exhibited, over recent years, repeat purchase behaviour of a particular firm service; and the significance of that expenditure in term of the customer's total outlay on that particular type of service.	Services
Selnes, 1993 (P. 21)	Behavioural	Customer loyalty expresses an intended behaviour related to the product or service. This includes the likelihood of future purchases or renewal of service contracts. Customers may be loyal if they are satisfied with the supplier or product brand and thus want to continue the relationship with the firm.	Services Manufacture education
De Wulf et al. (2001, p. 37)	Behavioural	Defined as a composite measure based on a consumer's purchasing frequency and amount spent at a retailer compared with the amount spent at other retailers from which the consumer buys	Cross-industry
Liang and Wang (2005, p. 72)	Behavioural	Measured in terms of repurchasing intentions, recommendations to others and intersecting purchase intentions	Financial Service industry
Zeithaml et al. (1996, p. 37)	Behavioural	Measured as loyal to company, willingness to pay more and propensity to switch	Services
Crosby and Tylor, (1983, p. 414)	Attitudinal	Defined as psychological commitment which refers to a tendency to resist change in preference in response to conflicting information or experience	Bottle ban
Cronin and Taylor (1992, p. 60)	Attitudinal	Measured in terms of repurchasing (purchase) intentions	Services
Hennig-Thurau et al. (2002, p. 244)	Attitudinal	Measured in terms of attitudinal loyalty	Different Services
Wang et al. (2006, p. 39)	Attitudinal	Measured in terms of repurchase intentions, recommendation to others and intersect purchase intentions	Information Service industry
Kim and Cha (2002, p 323)	Behavioural and Attitudinal	Measured in terms of share of purchase, relationship continuity and WOM	Hotels
Day (1969, p. 30)	Behavioural and Attitudinal	Defined as a buyer with brand loyalty score for each brand purchased in a given period , based on share of total purchases and attitude toward the brand	Buyer behaviour
Dick and Basu (1994, p. 99)	Behavioural and Attitudinal	Defined as the strength of the relationship between relative attitude and repeat patronage	Relationship marketing
Pitchard et al. (1999, p. 334)	Behavioural and Attitudinal	Defined as the proportion of a patron's behaviour was based on or attitude loyal atitude	Airline and hotels
Too et al. (2001, p. 292)	Behavioural and attitudinal	Defined as a multi-faceted construct which takes into account both psychological and behavioural components	Retail
Oliver (1999, p. 34)	Behavioural and Attitudinal	Defined as a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future	Valid for all context
Palmatier et al. (2006, p. 139)	Behavioural and Attitudinal	Defined as composite or multidimensional construct combining different groupings of intentions, attitudes and seller performance indicators	Meta-analysis framework
Kandampully and Suhartanto (2000, p. 346)	Behavioural and attitudinal	Measured in terms of repurchase and recommendation to the service provider.	Hotel industry
Prus and Randall (1996, p. 10)	Behavioural and attitudinal	Measured in terms of intention to buy, recommendation to others, repeat purchasing and purchasing more.	Valid for all context

Source: summarized by the author

2.10 Customer Lifetime Value

Customer lifetime value (CLV) is an important indicator in evaluating the performance of customer relationship, implying that firms should focus on the development and maintenance of long-term profitable customer relationships rather than discrete transactions (Buttle, 2010; Cravens and Piercy, 2009; Rust et al., 2010). Firms can increase their CLV when the relationships with long-term profitable customers are enhanced (Jain and Singh, 2002).

CLV (lifetime customer value, lifetime value) has been studied under the names of value from customer, customer equity and customer profitability. As illustrated in Table 2.10, an accepted consensus on the definition of CLV is that it represents the net present value of the expected revenues from customers over the lifetime of transactions with the firm minus the cost of attracting, selling and servicing them. That is, CLV refers to the net present value of expected benefits less the burdens from customers over their life of relationship with a firm (Dwyer, 1989). Although CLV is typically defined and calculated at an individual customer, which helps firms differentiate customers who are more profitable to firms, accurately estimating the revenues and costs of a relationship still remains challenging (Sohrabi and Khanlari, 2007). In theory, CLV represents the margin between how much a firm spends to acquire each customer and how much each customer is worth in monetary terms. Firms can compute it for individual customers from their purchase records and thus forecast individual customer's benefit, distribute promotions and allocate organizational resources to retain customers (Shin and Liu, 2003). However, in practice it is relatively difficult to make accurate calculations of it. Though several scholars have placed great emphasis on the financial perspective of CLV,

most are theoretical, complex and not applicable (Sohrabi and Khanlari, 2007). Therefore, CLV is not only a financial index, but a marketing index.

Table 2.10 Definitions of Customer Lifetime Value

Definition	Authors
The net present value of a future stream of contributions to overheads and profit expected from the customer	Jackson (1994)
Expected profits from customers, exclusive of costs related to customer management	Blattberg and Deighton (1996)
The total discounted net profit that a customer generates during his life on the house list	Bitran and Mondschein (1996)
The net profits or loss to the firm from a customer over the entire life of transactions of that customer with the firm	Berger and Nasr (1998)
CLV is the net dollar contribution made by individual customers to an organisation	Mulhern (1999)
CLV for a firm is the net profit or loss to the firm from a customer over the entire life of transactions of that customer with the firm	Jain and Singh (2002)
The present value of all future profits generated from a customer	Gupta and Lehmann (2003)
CLV refers to the net present value of an individual customer's purchases over his or her lifetime	Gummeson (2004)
CLV represents the present value of the expected benefits less the burdens from customers	Malthouse and Blattberg (2004)
CLV is the net present value of the profit that the firm will realize on the average new customer during a given number of years	Hughes (2005)
CLV is the sum of the revenues gained from company's customers over the lifetime of transactions after the deduction of the total cost of attracting, selling and serviving customers, taking into account the time value of money	Sohrabi and Khanlari (2007)
CLV is the present day value of all net margins earned from a relationship with a customer, customer segment or cohort	Buttle (2010)

Source: summarized by the author

It is stated that marketing construct will be a better way to measure CLV instead of expressing it based on financial factor. According to Hughes (1994) and Mcdonald

(1996), CLV can be measured from a marketing index, including "core relations", i.e. usages factor, fan identification, and "extend relations", i.e. product merchandising, word of mouth and opportunity cost. Therefore, this thesis will adapt a marketing index and examine which factors would affect CLV instead of the calculation of it.

2.11 Summary

This chapter defines the boundaries of the thesis by discussing the underlying constructs that are to be empirically examined in the proposed theoretical model. Eight underlying constructs are incorporated into the proposed research model. It should be noted that underlying constructs used in this thesis have not previously been presented in one single model (this is further discussed in chapter three). In addition, the inclusion of customer value as an important consequence of CRM in the proposed model is rooted in the perspective that when modelling customer-firm relationship, it should be included as a key constituent, because it is the core of CRM and RM (Boulding et al., 2005; Ravald and Grô nroos, 1996; Woodruff, 1997). Although there could be constructs other than those incorporated in the model, it is believed that this research has covered the constructs that are suited to answer the research questions proposed in Chapter One.

In order to provide a foundation for identifying the proposed model, a number of issues of RM and CRM assumed to be relevant to this thesis, are discussed. This is followed by five sections that review each underlying construct, providing a better understanding of the roles that they play in the model. In Chapter Three, the hypotheses in the model to be empirically tested are discussed. These hypotheses delineate the causal relationships between the underlying constructs proposed in this chapter.

CHAPTER THREE: CONCEPTUAL FRAMEWORK AND HYPOTHESES

3.0 Introduction

This chapter discusses the development of the hypotheses to be tested and the proposed research model to be analyzed. This chapter comprises six sections. The following section 3.1 provides an overview of the proposed research model developed to answer the research questions. Section 3.2 delineates the theoretical foundation of the research model and the hypotheses specifying the associations between the underlying constructs are then discussed in section 3.3. The final section 3.4 presents a chapter summary.

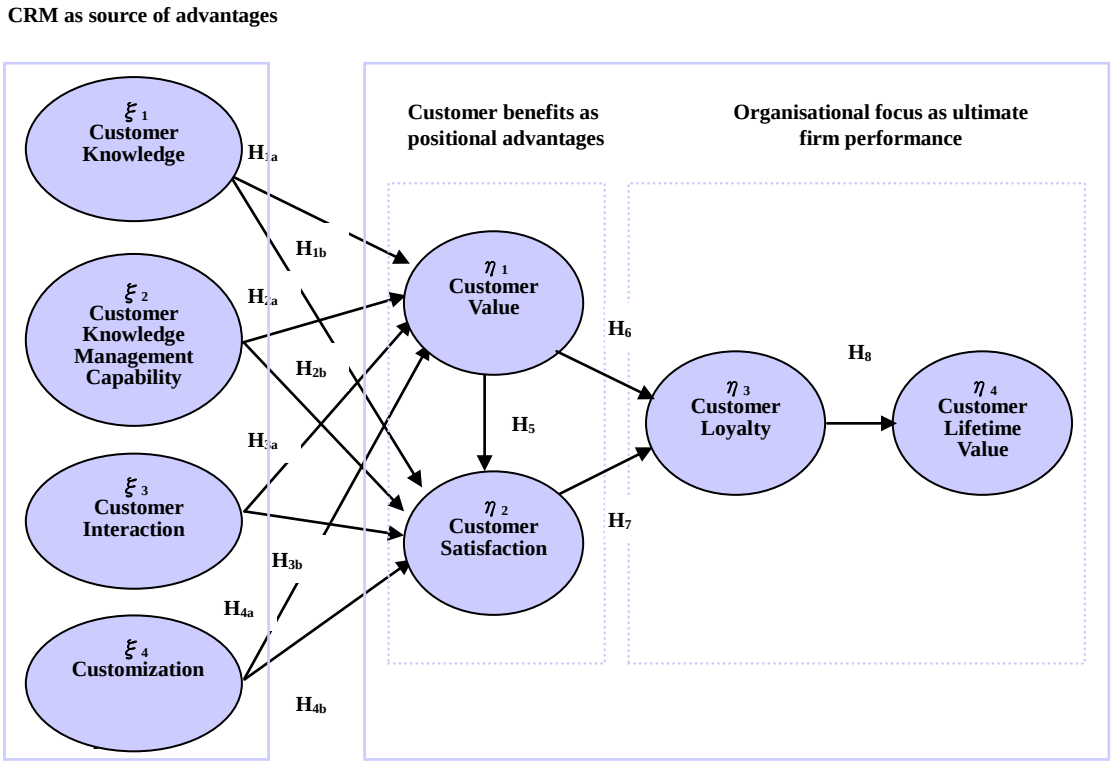
3.1 The Overview of Research Model

As discussed in Chapter One, this thesis aims to provide a comprehensive insight into the influence of CRM on customer benefits and the firm's performance from a dyadic perspective, focusing on both the firm's and the customer's perspectives in the banking industry in Taiwan. Therefore, eight underlying constructs have been integrated into one single model.

Based on the literature review in Chapter Two, the proposed conceptual framework and associated hypotheses are depicted in Figure 3.1. Eight underlying constructs have been integrated into the research model and these linkages dealt with twelve hypotheses. Four key constructs of CRM that reflect a firm's practice were viewed as organisational source of advantages to create customer value and customer satisfaction as customer benefits to form a positional advantage. Customer loyalty and CLV were assumed as the organisational focuses to reflect the ultimate firm performance. Eight hypotheses ($H_{1a, 1b}$ to $H_{4a, 4b}$) specified the impacts of each construct of CRM on customer value and customer satisfaction respectively. Two hypotheses (H_5, H_6) showed the influences of customer value on customer satisfaction and customer loyalty individually. Hypothesis H_7 made the connection between customer satisfaction and customer loyalty. Finally,

hypothesis H_8 presented the linkage between customer loyalty and CLV. In testing hypotheses by conducting structural equation modeling analysis, four constructs of CRM were viewed as exogenous latent variables (i.e., ξ_1, ξ_2, ξ_3 and ξ_4), while the constructs of customer value, customer satisfaction, customer loyalty and CLV were treated as endogenous latent variables (i.e., η_1, η_2, η_3 and η_4). This is because CRM's constructs were represented as the foundation upon which CRM employs its influence on customer value and customer satisfaction respectively, which in turn result in enhancing customer loyalty and CLV. In the following sections, the causal relationships of these hypotheses are discussed in more detailed.

Figure 3.1 Research Framework and Relevant Hypotheses



3.2 Theoretical Foundation of Research Model in this Thesis

This section discusses the theoretical foundation of the research model used in this thesis. It is divided into four sub-sections. The following section 3.2.1 provides an overview of marketing, RM and CRM. Section 3.2.2 discusses CRM's contribution to marketing and section 3.2.3 delineates the theoretical response in a proposed diagrammatic framework of CRM. Finally, section 3.2.4 explores the influence of CRM on customer benefits and the firm's performance as the theoretical foundation of the research model used in this thesis.

3.2.1 Overview of Marketing, RM and CRM

Marketing has moved from a goods-dominant view, in which tangible output and discrete transactions were central, to a service-dominant view, in which customer services that create value and relationships are central (Vargo and Lusch, 2008). Namely, marketing's thinking has shifted to understand, create and promise superior value and satisfaction to customers for keeping a long-term relationship with them (Cravens and Piercy, 2009; Kotler et al., 2008). From the perspective of relationship, RM presents a "new marketing paradigm" that takes shape across all the aspects of marketing (Brink and Berndt, 2008; Chen and Popovich, 2003; Parvatiyar and Sheth, 2001; Egan, 2005). However, the nature of RM is largely strategic and qualitative and thus lacks operational contents (Gummesson, 1994; Gebert et al., 2003). Specifically, without business process management as encompassed by CRM, RM will not be practised effectively by firms (Brink and Berndt, 2009; Chen et al., 2009). Plakoyiannaki and Tzokas (2002) argued that CRM represents a platform of cross-functional operations to revitalise and to enhance marketing activities, thereby also improving overall RM. As a result, CRM and RM, according to Richards and Jones (2008), are complementary and synergistic in facilitating and implementing all business processes oriented towards a better customer relationship. In the following section, CRM's contribution to RM will be discussed.

3.2.2 CRM's Contribution to RM

CRM is viewed as an IT extension of RM with management theory and approach which contribute to the realisation of RM which is mainly conceptual in nature and lacks operational contents (Bonnemaizon et al., 2007; Gummesson, 2002; Zineldin, 2000; Gebert et al., 2003). According to Schwede (2000), a widely accepted classification of CRM includes: 1) operational CRM improves the efficiency of CRM business processes and comprises solutions for sales force automation, marketing automation and call center, 2) analytical CRM manages and evaluates knowledge about customers for a better understanding of each customer using data warehousing and data mining and 3) collaborative CRM manages and synchronizes customer interaction points and communication channels (e.g., telephone, e-mail and Web).

Several scholars have proposed the aspects of CRM on RM. For example, in terms of marketing processes, CRM facilitates the realisation of cross-functional activities that sustains the efforts of RM (Boulding et al., 2005; Gebert et al., 2003; Payne and Frow, 2005). Peelen (2005) illustrated four marketing capabilities of CRM in facilitating customer knowledge capability, customizing products and services, interacting with customer actively and effectively and developing long-term customer relationships. Cravens and Piercy (2009) declared CRM's extensive contribution to marketing improvement in uncovering value-creating opportunities for customers and developing market comprehension and insights into building organisational competitive advantage. Furthermore, scholars (Doyle and Stern, 2006; Kotler et al., 2008; Richards and Jones, 2008) argued that CRM expedites the practice of customer-value-based marketing which drives firms to reorient their operations and processes towards the creation and the delivery of superior customer value. Richards and Jones (2008) synthesised CRM and marketing by identifying the drivers of customer value, which has meant that firms specify CRM as especially organisational value-building capability.

Numerous other scholars also investigated CRM's impact on the marketing effectiveness. For examples, the benefits that CRM offers result in increasing data sharing across the organisation, improving customer service and support, promoting

sales force efficiency and effectiveness (Cravens and Piercy, 2009; Croteau and Li, 2003; Donaldson, 2007; Gebert et al., 2003; Jones et al., 2005; Leigh and Tanner, 2004), customising products and services (Buttle, 2010; Chen and Ching, 2004; Jones et al., 2005; Kotha, 1995; Lin et al., 2010; Liang and Wang, 2005; Peelen, 2005; Thomas et al., 2004; Sigala, 2005), improving cross-selling/up-selling (Cravens and Piercy, 2009; Parvatiyar and Sheth, 2001) and enhancing market segmentation and customer targeting (Buttle, 2010; Cravens and Piercy, 2009; Chen and Popovich, 2003; Kotler et al., 2008; Plakoyiannaki and Tzokas, 2002; Tanner et al., 2005). Richards and Jones (2008) summarised seven core benefits of CRM on improved marketing. These include: 1) improved ability to target profitable customers, 2) integrated offerings across channels, 3) improved sales force efficiency and effectiveness, 4) individualized marketing messages, 5) customized products and services, 6) improved customer service efficiency and effectiveness and 7) improved pricing.

In addition, given the fact that value resource is the effective cross-functional operations, CRM integrating marketing, sales and customer service, therefore, can assist firms in specifically facilitating marketing activities that allocate effectively organisational resources to support customer benefits and the firm's performance (Donaldson, 2007; Gebert et al., 2003; Walters and Lancaster, 2000). In the following section, the theoretical response in a proposed diagrammatic framework of CRM will be further discussed.

3.2.3 Theoretical Response in a Proposed Diagrammatic Framework of CRM

The complexity of CRM stems from its multi-disciplinary contributions because of its multi-dimensional nature. In operational terms it is a force for change to alter the organisational landscape in transforming the efficiency and the effectiveness of an organisation in RM. Although a wide range of constructs of CRM have been proposed in previous studies, not all these studies appear to address all four key constructs, i.e. customer knowledge, CKM capability, customer interaction and customisation, identified in Chapter Two in a single study. Figure 3.2 shows that the potential benefits and connections with the customer management processes, customer value proposition,

and customer relationship performance are fundamental to CRM. So a theoretical framework of CRM is proposed in this thesis, which synthesizes and extends different perspectives of research literature on CRM and tries to incorporate them into a more useful, practical and coherent framework. It endeavors to build a completed configuration for employing CRM that can reflect its best practice for firms to improve their performance.

The theoretical framework (see Figure 3.2) is designed to explore how a firm creates value by connecting each objective in an explicit cause and effect relationship with each other according to the four constructs of CRM. These include placing at the top the **Customer Relationship Performance Perspective,** where the end results or achievement of CLV are included. This perspective contains performance results of customer satisfaction and loyalty bearing in mind that the objective is to create CLV through the enhancement of customer satisfaction and loyalty. The second section in the diagram for the **Customer Perspective** has linkages upwards and downwards to allow consideration of performance measurement and to develop a desired value proposition to targeted customers. So the Customer Perspective clarifies the conditions that will create superior value to the customer. The value proposition reflects the relationships among performance attributes of products and services, the fulfilment of customers' needs, the development of long-term relationships and the creation of brand image (Lanning and Michaels, 1988). It can be explained as the mix of price, quality, time, selection, functionality, service, partnerships and branding that the firm offers to its customers and as supported by Kaplan and Norton (2001). CRM focuses on finding the right customers, getting to know them, growing their value, retaining them and enhancing closer relationships with them (Woodcock et al, 2000). In doing so, the firm should consider the linkage between customer value proposition and customer management processes (Buttle, 2010). For example, offering a unique and defensible value proposition of superior products and outstanding service to customers at the stage of customer selection, communicating the value proposition and customizing mass marketing for customer acquisition, providing premium services as knowledgeable solutions to customers at the stage of customer retention and finally offering

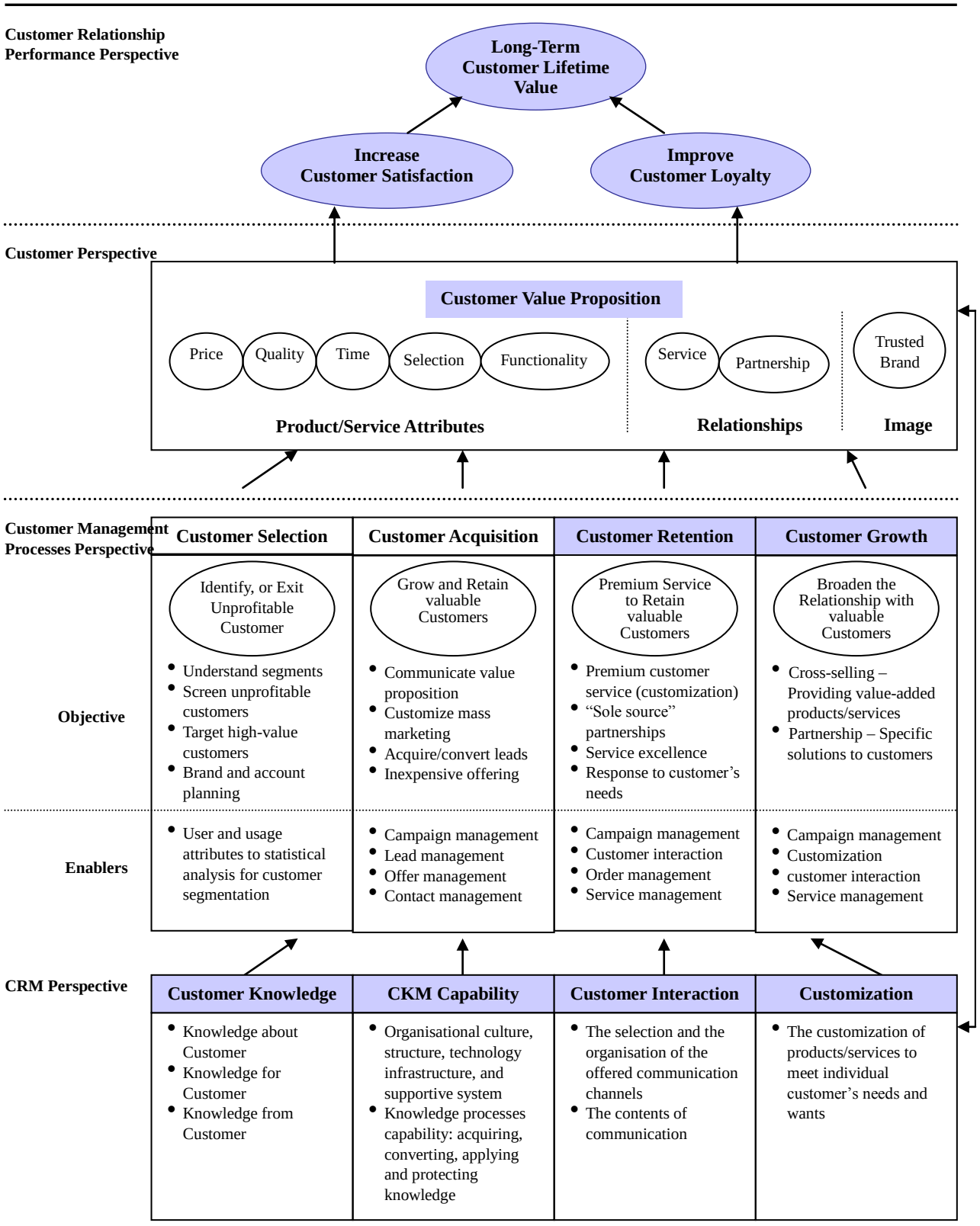
value-added products and services (cross-selling) and specific solutions to grow customer relationships (Kaplan and Norton, 2004).

The third section in the diagram clarifies the **Customer Management Process Perspective** for implementing a plan to deliver the value proposition across the customer lifecycle. For example, at the stage of customer selection banks create a unique and defensible value proposition and brand image for customers. At the stage of customer acquisition they use relatively high interest rates on deposit accounts or relatively low charges on credit cards as incentives and relationship-starter services to win new customers. At the stage of customer retention they provide customers with premium services, e.g. customisation, two-way interaction channels and rapid resolution of questions and problems. Finally, at the stage of customer growth banks offer high value-added services and specific solutions. Because customer management processes can be supported by marketing, sales and service integrated by CRM (Gebert et al., 2003), these assist firms to have a better customer selection through customer analysis, improve customer acquisition by using customer database marketing, enhance customer retention and grow customer relationship through campaign management, e.g. sending special offers to selected customers using various channels), contact management, service management, e.g. Internet 24 hours service and call centre, customer interaction, e.g. multichannel interaction customer service, and customization (Buttle, 2010; Donaldson, 2007; Kaplan and Norton, 2004; Gebert et al., 2003). These relevant CRM business processes integrate and complete these business functions as marketing, sales and service (Gebert et al., 2003). The fourth and last section in the diagram refers to the **CRM Perspective** with the four key constructs of CRM as "customer Knowledge, CKM Capability, customer interaction and customization". Customer knowledge refers to knowledge about, for and from customers that is the foundation of CRM and helps firms have a good understanding of customers' needs, wants and preferences, customize their products and services and sustain continual innovation and improvement of offerings (Gebert et al., 2003; Garcia-Murillo and Annabi, 2002; Park and Kim, 2003; Ö sterle, 2001; Salomann et al., 2005). CKM capability refers to specifics of knowledge capability that are concerned with knowledge infrastructure capability consisting of organisational structure, culture, technology, supportive systems, and with knowledge

process capability consisting of knowledge acquisition, conversion and application. Customer interaction focuses on the selection and the organisation of the offered multi-channels and the contents of communication. Customization refers to manufacturing a product or delivering a service in response to individual customer's needs. These are organisational value-building resources to enable CRM activities and customer relationships to be performed at high levels to support all of the above perspectives. The arrows in the diagram reflect the links between the different perspectives. Ultimately, improvement in terms of the CRM perspective comes about if a lasting and dramatic change in an organisational performance is to be achieved.

Finally, Figure 3.2 demonstrates that the arrows of effect are from lower perspectives to higher perspectives. The higher perspectives involve both customers and firms in the case of the customer relationship performance perspective, customers in the case of the customer's perspective and firms in the case of customer management processes perspective. As illustrated in Figure 3.2, linking the regions marked in blue in individual perspectives forms the foundation on which the theoretical model, as depicted in Figure 3.1, would be built up to explore the causal relationships between these underlying constructs from the firm's perspective and the customer's perspective.

Figure 3.2 Theoretical Response in Diagrammatic Framework of CRM



3.2.4 Link between CRM, Customer Benefit and Firm Performance

Though there are many theoretical reasons to expect a positive effect of CRM on the firm's performance, the empirical evidence is inconclusive because the mediating mechanisms between them have not been fully considered (Zablah et al., 2004). Amid this situation, managers have little guidance on how to focus their CRM efforts on improving the performance (Reimann et al., 2010). The performance effect of CRM is potentially not a direct relationship. However, few studies were found to consider the possibility of important mediating variables (e.g., differentiation and cost leadership) between CRM and the firm's performance (Zablah et al. 2004; Shugan 2005). As outlined in Table 3.1, the empirical results related to the impact of CRM on performance have been mixed, with several studies finding positive relationships and others identifying insignificant links. Therefore, it is relatively significant to thoroughly inspect the generative mechanisms through which CRM contributes to the firm's performance (Shugan, 2005). Consequently, the object of this research is to empirically advance the understanding of the relationships between CRM, customer benefit and firm performance. The researcher's focus is to analyze whether CRM links directly to the firm's performance or whether this relationship is mediated by customer benefit. In particular, the mediating effects of customer value and customer satisfaction are considered. Furthermore, the performances of CRM were assessed only from the manager's perspective, while some should be preferably evaluated by customers' perception. Senior managers as key informants are adequate source for reliable and valid data, because they are the heads of each branch and manage all customer services and supports and thus are viewed as the knowledgeable respondents to answer the questions. However, a firm's internal perspective should not be the only source of information about its CRM performance (Sin et al., 2005), implying that the possibility of evaluating a dyadic perspective should be considered.

According to Reimann et al. (2010) Shugan (2005) and Zablah et al. (2004), the important mediating variables between CRM and the firm's performance do exist. This is the backdrop in which the proposed model in this thesis attempts to make a contribution and provide its clarity. To address this issue, this research posits that CRM

lies in the source → position → performance framework, which asserts that CRM is the source of competitive positions, i.e. customer value and customer satisfaction (so called customer benefits), which in turn yield further the firm's performance, indicated by customer loyalty and CLV. This conceptual framework is developed around the argument that CRM has been explicitly viewed as a distinctive organisational capability with the potential of being a major source of a firm's positional advantage and performance (Coltman, 2007; Day and Wensley, 1988; Day and Van den Bulte, 2002; Reimann et al., 2010). This perspective is in line with Vargo and Lusch (2004, 2008), who asserted that firms should develop and employ their core competences (e.g., organizational customer knowledge and skills in CRM) as operant resources of competitive advantage from which customer relationship could benefit by competitively value propositions than competitors and, thus firm performance could be improved. Moreover, it is rooted in the perspective that CRM should consider the creation of value for customers as the core outcome (Donaldson and O'Toole, 2007; Kotler et al., 2008; Payne and Frow, 2005; Boulding et al., 2005) and that when modelling a customer-firm relationship, customer value should be included as a key constituent, because it has been viewed as the core of this relationship (Rust et al., 2010; Ulaga and Eggert, 2006). Furthermore, the firm, particularly a service firm, that employs a relationship-based marketing should monitor customer satisfaction as an important consequence of CRM (Cravens and Piercy, 2009; Kotler et al., 2008; Grönroos, 1994).

Specifically, customer value has been viewed as an important consequence of CRM and as an antecedent of customer satisfaction for the following three reasons. First, a long-term customer-firm relationship is built on the creation and delivery of superior customer value on a sustained basis (Christopher et al., 1991; Gummesson, 2002; Parvtiyar and Sheth, 2001; Ulaga and Eggert, 2006; Ravald and Grö nroos, 1996; Slater and Narver, 2000). Secondly, it is emphasized that CRM should focus on reorienting the organisational operations and processes towards the superior value to customer that competitors cannot match (Coltman, 2007; Kotler et al., 2008; Martin, 2010; Rust et al., 2010). Thirdly, the importance of customer value may be because this research examined the banking setting where cost (e.g., price), financial returns (e.g., quality) and risk (e.g., reputation) are predominant issues for the customer (Lin et al., 2009; Liu,

2007). Therefore, these draw the researcher's interest and attention on how customer value can play effectively as a trigger to enhance the firm's performance in a customer-to-firm relationship.

As illustrated in Figure 3.1, the four constructs of CRM represent a firm's practice to form a positional advantage when customer value and customer satisfaction are achieved. In turn, customer loyalty and CLV are enhanced to reflect as the final outcomes. This research aims to investigate the causal relationships between these underlying constructs, and also to understand whether the effects of each construct of CRM on customer benefits and the firm's performance as seen by firms coincide with those perceived by customers.

Table 3.1 Summary of Empirical Studies Describing the Impact of CRM on Performance

Author(s)	Perspective of CRM	Performance Outcomes of CRM	Sample	Perspective of Performance Evaluated
Day and Van den Bulte (2002)	Customer relating capability comprises three interrelated components: 1) relationship orientation, 2) customer information and 3) configuration	1) customer retention 2) sales growth 3) profit **Positive (**Customer relating capability**)**	345 firms from various industries in U.S.	Firm perspective (senior managers)
Croteau and Li (2003)	CRM technological initiatives involve operational and strategic perceived benefits, top management support, organisation, organisational readiness, and knowledge management capabilities	1) Internal focus (i.e., in terms of customer retention rate and loyalty) 2) External focus (i.e., in terms of perceived customer satisfaction) **Positive** (top management support and knowledge management capabilities) **Insignificant** (operational and strategic perceived benefits, organisational readiness)	57 private firms in five industries in Canada	Firm perspective (CEO and president)
Yim et al. (2004)	CRM consists of four dimensions: focusing on key customer, organizing CRM, managing knowledge, and incorporating CRM-based technology	1) Customer satisfaction 2) Customer retention **Mixed** (depending on CRM's constructs and dependent variables)	215 firms from banks, investment firms, insurance firms and other firms	Firm perspective (general managers)
Reinartz et al. (2004)	CRM process: relationship initiation, maintenance and termination; CRM-compatible organizational alignment: training procedure, employee incentives and organizational structures; CRM technology: the information technology that is deployed for the specific purpose of better initiating, maintaining, terminating customer relationship	Economic performance (perceptual and objective) **Positive** (Three stages of initiation, maintenance and termination) **Marginally significant** (CRM compatible organizational alignment) **Insignificant for objective performance (**CRM technology**)** **Mixed** (depending on relationship stages and perceptual performance)	211 firms from various industries	Firm perspective (Senior executives, sales managers, marketing managers)
Sin et al. (2005)	CRM is a multi-dimensional construct consisting of four components: key customer focus, CRM organisation, knowledge management, and technology-based CRM	1) Marketing performance (trust and customer satisfaction) 2) Financial performance (return on sales and investment) **Positive** (CRM)	276 firms from various industries in Hong Kong	Firm perspective (top management executives)
Jayachandran et al. (2005)	CRM is supported by organisational routines (customer relationship orientation (CRO) and customer-centric management system (CCM), relational information process (CIP), and CRM technology use	Customer relationship performance (achieving customer satisfaction and keeping current customer) **Positive** (CRO, CCM and CIP) **Insignificant** (CRM technology use)	172 business units from various industries in U.S.	Firm perspective (vice president or general managers)

Table 3.1 (Continued)

Mithas et al. (2005)	CRM applications facilitate organisational learning about customers by enabling firms to analyse purchase behavior across transactions through different channels and customer touchpoints	1) Customer knowledge 2) Customer satisfaction **Positive** (CRM)	360 large U.S. firms	Firm perspective (top managers)
Coltman (2007)	CRM capability is a multi-dimensional construct consisting of three components: skills and experience at converting data to customer knowledge, level of IT infrastructure, and alignment of incentives, customer strategy and structure.	Performance (return on investment, sales growth, cost reduction and generating revenue) **Indirect effect of CRM capability on performance via market orientation**	91 firms from various industries in Australia	Firm perspective (senior managers)
Chen et al., (2009)	CRM effectiveness is a multi-dimensional construct consisting of three components: relationship marketing (RM), customer-focused information technology (CFIT) and customer-focused organisational climate (CFOC), to measure customer relationship management effectiveness (CRME).	Customer loyalty **Positive** (CRM)	221 firms from financial firms and manufacturing firms in Taiwan	Firm perspective (managers)
Reimann et al. (2010)	CRM is defined as a firm's practices to systematically manage its customers to maximize value across the relationship lifecycle and involves three first-order dimensions including CRM initiation, maintenance and termination.	Performance (customer satisfaction, market effectiveness and profitability) **Indirect effect of CRM on performance via differentiation and cost leadership**	318 business units from various industries in U.S.	Firm perspective (chief executive and vice president)
Battor and Battor (2010)	CRM capability is a multi-dimensional construct comprising three interrelated components: 1) relationship orientation, 2) customer information and 3) configuration	Performance relative to major competitors 1) Financial performance (profitability and return on investment) 2) marketing performance (marketing share, sales growth, customer satisfaction and retention) **Positive** (CRM)	180 companies in UK	Firm perspective (high-level executive)
Soliman (2011)	Focus on main customers, the organisation efficiency and customer knowledge management are identified as important elements of CRM that relate to marketing performance	Marketing performance (i.e., preserving current customer, attracting new customers, increasing the market share and the standard of sales growth). **Positive** (focus on main customers, the organisation efficiency and customer knowledge management)	96 financial institutions in the Arab Republic of Egypt	Firm perspective (supervisors of senior management)
Wang and Feng (2012)	CRM capability is a multi-dimensional construct consisting of four components: customer knowledge management capability, customer interaction management capability, customer relationship upgrading capability and customer win-back capability.	Firm performance (overall performance, market share, sales growth rate, profitability and customer satisfaction) **Positive** (CRM)	162 firms from service firms in China	Firm perspective (senior managers)

Source: summarized by the author

3.3 Research Hypotheses

Following section 3.2, this section further develops the research hypotheses to answer the research questions. It is espoused that CRM positively affects customer benefits and the firm's performance, both conceptually and empirically. Therefore, the following sections (3.3.1 to 3.3.4) discuss the impact of each construct of CRM, i.e. customer knowledge, CKM capabilities, customer interaction and customization, on customer value and customer satisfaction, individually. Section 3.3.5 specifies the effects of customer value on customer satisfaction and customer loyalty respectively. Following that, section 3.3.6 explores the consequence of customer satisfaction on customer loyalty and the association between customer loyalty and CLV is discussed in section 3.3.7.

3.3.1 The Relationship between Customer Knowledge, Customer Value and Satisfaction

With better customer knowledge, firms have more potential to keep track of what customers need, which results in firms being better able to help customers in a more targeted manner and with more appropriate solutions (Kotler et al., 2008; Nejatian et al., 2011). Thus, superior customer value and customer satisfaction are more likely to be created and achieved (Garcia-Nurillo and Annabi, 2002; Mithas et al., 2005; Mack et al., 2005). Numerous scholars (Gebert et al., 2003; Garcia-Nurillo and Annabi, 2002; Kotler et al., 2008; Lesser et al., 2000; Massey et al., 2001; Mithas et al., 2005; Nasution and Mavondo, 2007; Ravald and Grönroos, 1996; Ryals and Knox, 2001; Slater and Narver, 1994) emphasized that customer knowledge is the source of customer value if it could be incorporated into organisational marketing planning and operating activities. If so, customer knowledge could enable firms to reuse "best practice" solutions to solve problems for customers (Lesser et al., 2000). For example, it makes the innovation and improvement of products and services precise in fitting the true needs and expectations of customers (Garcia-Nurillo and Annabi, 2002). Similarly, Ravald and Grönroos (1996) and Ryals and Knox (2001) argued that superior customer value is created when a firm's offerings are tailored to customer micro-segments, facilitated by detailed and

integrated customer knowledge.

According to Nasution and Mavondo (2007) and Walters and Lancaster (2000), customer value is mainly driven from organisational knowledge. Specifically, it means collaborating with and learning from customers and being adaptive to their individual dynamic needs (Vargo and Lusch, 2004). This is consistent with Reichheld (1996), who stated that the key to the creation of customer value is organisational knowledge learning, and with Gebert et al. (2003) who argued that customer knowledge links and integrates business activities, such as marketing, sales and service, to assist firms in allocating effectively organisational resources to support the creation and delivery of customer value. Specifically, the knowledge residing in customers could be the greatest source of value (Gibbert et al., 2002). Moreover, when firms better infuse customer knowledge into the sales team, it will produce a positive impact on the ability of salespeople to support customer service and drive superior value to the customer (Donaldson, 2007).

In addition, Mithas et al.'s (2005) empirical study, surveying the top IT managers at more than 300 large U.S. firms, asserted that customer knowledge enables firms to discover hidden patterns of individual tastes of customers for customizing offerings to fit customers' requirements, which leads to greater customer satisfaction. That is, customers are more likely to get satisfied with firms' offerings when firms keep in tune with voice of customers, because customer knowledge addresses customers' real needs (Plessis and Boon, 2004). This is consistent with Brown (2000) and Oliver (1999), who argued that customer knowledge enables firms to understand better what customers need, what customers think and what customers do, firms become more efficient and effective in creating customer delight and value. In this regard, social media (SM) services play a pivotal role of collecting information about and from customers (Pavicic et al., 2011). Denning (2011) suggested that SM, such as Twitter, Facebook, or a blog, could help firms find out what delights customers and adjust appropriately their services to fit what customers value.

CRM is viewed as knowledge-oriented processes with the characteristics of customer knowledge intensity in nature (Bose and Sugumaran, 2003; Gibbert et al., 2002; Gebert et al., 2003; Sigala, 2005; Salomann et al., 2005; Ho and Chuang, 2006; Zablah et al., 2004). If firms could employ customer knowledge well, they would proactively and consistently develop products and services tailored to suit the evolving needs of customers to boost superior value and satisfaction to customers (Roig et al., 2006; Stringfellow et al., 2004). Furthermore, when employees carry out their work with great customer knowledge, customer value and satisfaction are cultivated (Yim et al., 2004; Sin et al., 2005). Therefore, the following hypotheses will be investigated.

H_{1a} : Customer knowledge has a direct and positive effect on customer value
H_{1b} : Customer knowledge has a direct and positive effect on customer satisfaction

3.3.2 The Relationship between Customer Knowledge Management Capability, Customer Value and Satisfaction

According to Boulding et al. (2005), CRM is mainly underpinned by the following practical capabilities to generate customer value: 1) the intelligent use of data and technology to acquire customer knowledge, 2) the diffusion of this knowledge to appropriately make marketing decisions and 3) the utilisation of this knowledge by managers and employees to select and target customers for marketing purposes. In practice, firms employ their CKM capability to screen, identify and target customers, forming a relatively effective value proposition that better fits the customers' specific needs (Buttle, 2010; Woodcock et al, 2000). When customers are more likely to fit the firm's offers, this would improve customers' perceptions of the price, quality and convenience that results in superior value to customers (Richards and Jones, 2008). On the other hand, CKM capability support firms to become more customer-centric in conducting cross-functional marketing plan, but customer-facing employees to improve both the speed and completeness of their resolution efforts to customer service (Gebert et al., 2003; Richards and Jones, 2008). Therefore, it is a fundamental precept of CRM that firms deploy CKM capability as an organisational value-building resource which links and integrates CRM business activities, e.g. marketing, sales and services, to

ensure the creation of customer value and satisfaction at a better level (Gebert et al., 2003; Wright and Stone, 2010).

CKM capability plays a critically pivotal role when CRM serves to improve the marketing effectiveness, particularly in creating customer value (Plakoyiannaki and Tzokas, 2002). Numerous studies have shown a positive influence of CKM capability on customer value. According to Xu et al. (2002), for example, CKM capability results in the following benefits to customer value: 1) better contact management through automated customer contacts, 2) easier development of products and services that match customer needs, 3) quicker responses to customer questions and complaints and 4) better access to information on marketing, sales and service to serve the customers. Similarly, Richards and Jones (2008) induced the following benefits to customer value: 1) improved ability to target profitable customers, 2) improved sales force efficiency and effectiveness, 3) individualized marketing messages, 4) customized products and services and 5) improved customer service efficiency and effectiveness. Furthermore, Karakostas et al.'s (2005) findings, in the context of financial services in B-to-C setting in the UK, stated that the effective management of customer knowledge enables firms to provide customers with a variety of offerings tailoring to customers' needs, services innovation and lower price. This is consistent with Chen and Ching's (2004) finding, in the context of banks and insurance and securities trading in Taiwan, that superior customer value and psychological satisfaction, e.g. confidence, trust and reduced anxiety, could be realised when firms enhance their knowledge absorptive capability. In addition, Croteau and Li's (2003) empirical study, in the context of manufacturing, transportation and communication, retail, finance and insurance and service in Canada, supported a positive impact of CKM capability on customer satisfaction. This is based on the rationale that CKM capability helps achieve a comprehensive view of the customers internally and provides a unified face to all customers externally. Further supporting evidence from Jayachandran et al. (2005), in the context of both services and goods firms in B-to-B and B-to-C markets in US, declared that CKM capabilities has a positive association with customer satisfaction and customer retention. By integrating and sharing customer knowledge throughout the organisations, firms are more likely to provide consumption-related fulfilment and quick and effective responses to customers'

specific needs and complaints. Similarly, Campbell's (2003) empirical finding, in the financial services industry in Canadian, showed that the gaps between customer requirements and the firm's offering can be closed, when firms can effectively acquire customer knowledge, convert it into useful form and apply it. Yim et al.'s (2004) empirical finding, in the context of financial service company in Hong Kong, supported that customer knowledge capability exhibits a significant and direct effect on customer satisfaction.

The key of CRM is a firm's ability to acquire, manage and model customer information with which a firm efficiently and effectively manages customer relationships with higher performance of customer value and satisfaction (Boulding et al., 2005; Hogan et al., 2002). It is because a firm with better CKM capability will be in a better position to consolidate and concentrate its knowledge assets to create superior customer value over time, ultimately resulting in superior customer satisfaction and retention (Bose and Sugumaran, 2003; La and Kandampully, 2004; Slater, 1997; Slater and Narver, 2000). As Kakabadse et al. (2001) emphasized, human knowledge capabilities have always been at the core of value creation. Therefore, based on the literature review above, the following hypotheses will be investigated.

H_{2a} : Customer knowledge management capability has a direct and positive effect on customer value

H_{2b} : Customer knowledge management capability has a direct and positive effect on customer satisfaction

3.3.3 The Relationship between Customer Interaction, Customer Value and Satisfaction

A review of literature has revealed that customer interaction has positive effects on customer value and customer satisfaction, both conceptually and empirically (Denning, 2011; Kim et al., 2003; Jayachandran et al., 2005; Pavicic et al., 2011; Peppers and Rogers, 2011; Richards and Jones, 2008; Soloman et al 1985; Su et al., 2006; Wortzel

1987; Xu and Walton 2005; Wang and Feng, 2012; Zablah et al., 2004). Customer interaction refers to a set of functions that allow the firms to interact effectively with their customers across multichannel communication to achieve an optimum of customers' needs, which in turn leads to generate the maximum of customer value (Peelen, 2005; Payne and Frow, 2005). According to Kim et al. (2003), customer interaction focuses on conducting a useful dialogue with customers to create positive customer experiences and added value for them by the fulfilment of the customer's needs and reduced cost. Effective customer interaction can offer richer contents and help explain why customers do what they do so that firms have a comprehensive idea of customer problems, preferences and needs to communicate regarding customer value requirement (Gordon, 1998; Garcia-Murillo and Annabi, 2002). That is, when meaningful and consistent messages and services are delivered, the customers' perceptions of value are enhanced (Cravens and Piercy, 2009; Denning, 2011; Pavicic et al., 2011).

Payne and Frow's (2005) empirical finding, in the context of large firms in both the B-to-B and B-to-C sections, demonstrated that multichannel customer interaction takes the outputs of the organisational business strategy and value-creation processes, and then translates them into value-adding interactions with customers. When the positive customer experience is enhanced, the higher customer satisfaction is achieved. This is consistent with Zablah et al. (2004), who argued that customer interaction leads to superior customer value of the economic and psychological benefits and positive customer satisfaction when it positively provides the exchange of core benefits (i.e., products and services for money), information exchange and social exchange (i.e., interpersonal exchange). Moreover, Jayachandran et al. (2005) stated that through the appropriateness of customer interaction, firms can generate commitment, a lasting desire in customers to maintain a valued, trusted relationship, which in turn enhances customer satisfaction and retention. Sin et al.'s (2005) empirical finding, in the context of service firms in Hong Kong's financial industry, revealed that by interacting with customers in a satisfactory manner, firms can provide right offerings to meet customers' changing needs and thus gain the increase in customer satisfaction. As Wortzel (1987) noted, to get more advantageous in the competitive market, firms should do best efforts

to deliver the highest value to customers through better customer communication and interaction. Therefore, the following hypotheses will be investigated.

H_{3a} : Customer interaction has a direct and positive effect on customer value
H_{3b} : Customer interaction has a direct and positive effect on customer satisfaction

3.3.4 The Relationship between Customization, Customer Value and Satisfaction

A requirement to build mutually beneficial relationships is to customise products and services to fit individual customers' specific needs which can create superior value and higher satisfaction to customers (Cravens and Piercy, 2009; Kotler et al., 2008; Peppers and Rogers, 2011). Customisation allows firms to develop their products and services that reflect the value customers want (Gordon, 1998). Given modern day advances in IT which enhance organizational knowledge infrastructure and processes capability, firms have greater availability to learn more about changing customer requirements and thus to customize their offerings or provide specific solutions tailored to individual customers to create superior customer value.

Various studies have highlighted the potential of CRM for shifting from mass marketing to mass customization, which is more likely to provide added-value to customers and increase customer satisfaction (Chen and Ching, 2004; Liang and Wang, 2005; Peelen, 2005; Peppers and Rogers, 2011; Richards and Jones, 2008; Sigala, 2005; Sin et al., 2005; Tu et al., 2001; Wang et al., 2010; Winer, 2001). Customisation in the planning process of value-building, particularly regarding the design and the development of products and services, enhances the degree of customer orientation and reflects the extent of meeting the explicit and implicit needs of customers. Because customized products and services endeavour to fit individual customer needs, superior customer value and satisfaction are more likely to be achieved (Croteau and Li, 2003; Stefanou et al., 2003; Simonson, 2005; Wortzel, 1987; Wang et al., 2010). For example, Kotha's (1995) empirical evidence, in the setting of National Bicycle Industrial Company in Japan, confirmed that customized products generally offer greater value to customers. Tu et al.'s (2001) finding from 1000 manufacturing firms in US verified the positive

impact of mass customization on customer value because customers really want products and services that meet their needs. Similarly, Liang and Wang's (2005) empirical finding, in financial services industry in B-to-C context, demonstrated that customized offer helps firms develop an independent customer relationship and win the customers' trust and satisfaction because it fits the customers' needs and expectations and creates added value for them. Because customization should be better service than routine service that does not completely meet the individual's needs, it is more likely for firms to capture customers' voices and generate greater customer value (Tu et al., 2001) and a more satisfactory relationship than competitors (Ball et al., 2006).

CRM aims to enhance mutual value for the parties involved in the relationship by customizing the firm's offerings to anticipate and serve the emerging needs of individual customers (Parvatiyar and Sheth, 2001). Wang et al.'s (2010) empirical findings revealed that customer value and customer satisfaction can be achieved because of the individualized attention and specific tailored solutions. High customization through discovery of latent needs and provision of tailored solutions can heighten customer satisfaction (Wang et al., 2010). Namely, as customers are increasingly demanding to be treated as individuals, not just as members of a large group, customizing offering has become an important key to create customer value and satisfaction (Koutsabasis et al., 2008). If firms could tune into customers' needs and frontline employees actively adjust their behaviours towards customers' expectations, this implicates that customer value and satisfaction would be derived (Chen and Ching, 2004). As Bettencourt and Gwinner (1996) stated, customers who experience "customized" service encounters will be more satisfied than those who experience "standardized" service encounters. Accordingly, the following hypotheses are proposed.

H_{4a} : Customization has a direct and positive effect on customer value
H_{4b} : Customization has a direct and positive effect on customer satisfaction

3.3.5 The Relationship between Customer Value, Satisfaction and Loyalty

Numerous studies have provided empirical evidence to support a positive effect of customer value on customer satisfaction (Cronin et al., 2000; Eggert and Ulaga, 2002; Fornell et al., 1996; Hellier et al., 2003; Lin et al., 2009; McDougall and Levesque, 2000; Patterson and Spreng, 1997; Storbacka et al., 1994; Ulaga and Eggert, 2006; Wang et al., 2004). According to Hallowell (1996), customer satisfaction is the result of a customer's perception of the value received in a transaction or relationship. When the customers perceive the value of products and services and are willing to sacrifice more opportunity costs by consuming the offerings, the likelihood of customer satisfaction and loyalty should be high (Lin et al., 2009; Wang et al., 2004). Hellier et al. (2003) and Woodruff (1997) argued that when the customers receive benefit greater than the cost after the purchase, they become more satisfied. Customer value has been recognized as being positively associated with customer satisfaction and loyalty. That is, meeting customer-value expectations results in higher customer satisfaction which in turn strengthens the relationship.

Furthermore, Storbacka et al.'s (1994) relationship profitability model, in the context of financial services sector, stated that when what customers receive, e.g. quality, is greater than what they sacrifice, e.g. price, customer satisfaction is improved. In Fornell et al.'s (1996) ACSI model, a significant, positive correlation between customer value and customer satisfaction is supported. The impact of quality-driven value on customer satisfaction is greater than price-driven value. The empirical study of Patterson and Spreng (1997), in the B-to-B services context in Australia, supported that customer value has a direct, strong and significant effect on customer satisfaction and customer satisfaction in turn has a significant effect on purchase intentions. Similarly, Ulaga and Eggert (2006) finding revealed that customer value is an antecedent to customer satisfaction and behavioural outcomes, i.e. expanding business with a firm.

Wang et al. (2004) further examined the associations between the dimensions of customer value (i.e., functional value, social value, emotional value and customer perceived sacrifices) and customer satisfaction. The findings highlighted the significant

negative role of customer-perceived sacrifice in the customer satisfaction. Similarly, Lin et al.'s (2009) empirical finding, in the context of the banking industry in Taiwan, showed that a positive and direct relationship exists between customer value and customer satisfaction, while functional value does not significantly affect customer satisfaction. As Ravald and Grönroos (1996) noted, by adding more value to products and services, firms can improve customer satisfaction so that the bond of a relationship is strengthened and thereby customer loyalty is achieved. A strongly positive and highly significant relationship between customer value and customer satisfaction does exist (Eggert and Ulaga, 2002; McDougall and Levesque, 2000). Therefore, the following hypothesis will be investigated.

H_5 : Customer value has a direct and positive effect on customer satisfaction

The customer value-loyalty causal relationship appears intuitively obvious, but has been subjected to limited empirical analysis. However, several studies have theoretically or empirically demonstrated that customer value has a positive influence on customer loyalty (Andreassen and Lindestad, 1998; Butz and Goodstein, 1996; Bolton, 1998; Cronin et al., 2000; Eggert and Ulaga, 2002; Ham, 2003; Lindgreen and Wynstra, 2005; Lin et al., 2009; McDougall and Levesque, 2000; Patterson and Spreng, 1997). Reichheld and Teal (1996) stated that "the key to customer loyalty is the creation of customer value." Customers who receive benefit more than sacrifice from a firm's products and services, will become satisfied and remain more loyal to that firm and place their future purchase with that firm (Lindgreen and Wynstra, 2005). This is in line with Ulaga and Eggert (2006), who argued that not only can customer value positively and directly affect customer satisfaction, but customer loyalty in expanding business with the firm. Indeed, superior customer value can help firms build close emotional links with their customers (Butz and Goodstein, 1996). Patterson and Spreng's (1997) empirical finding, in a B-to-B services context, showed that a strong and significant relationship between customer value and repeat purchase intentions exists. Another support proposed by Sheth and Parvtiyar (1995) revealed that developing superior customer value could create a greater bonding between customers and marketers. That is, customers will be more committed to firms when bonding is enhanced. Similarly, Lin

et al.'s (2009) empirical finding, in the banking setting in Taiwan, indicated that functional value in customer value aspect is positively related to customer loyalty. It implicates that customers may stay loyal to a firm if they feel that they are receiving greater functional value than they would get from the competitors. Therefore, based on the review, the following hypothesis will be investigated.

H_6 : Customer value has a direct and positive effect on customer loyalty

3.3.6 The Relationship between Customer Satisfaction and Customer Loyalty

The effect of customer satisfaction on loyalty has been well-conceptualized and well-researched. Various empirical studies have demonstrated a strongly positive linkage between customer satisfaction and customer loyalty (Anderson et al., 1994; Ball et al., 2004; Cronin and Taylor, 1992; Doyle, 2006; Fornell, 1992; Fornell et al., 1996; Grønholdt et al., 2000; Guo et al., 2009; Hallowell, 1996; Ham, 2003; Joo and Sohn, 2006; Kristensen et al., 2001; Lin et al., 2009; Reichheld and Sasser, 1990; Selnes, 1993; Ulaga and Eggert, 2006; Woo and Ennew, 2004). For instance, Reichheld and Sasser (1990) indicated that raising customer satisfaction can increase their future loyalty. Customer satisfaction is the driving force of customer loyalty. Fornell (1992), Cronin and Taylor (1992), and Selnes's (1993) empirical studies across different industries showed the positive customer satisfaction-loyalty relationship. Later, Fornell et al.'s (1996) ACSI model provided additional empirical support for a strong positive correlation between customer satisfaction and loyalty. That is, a satisfied customer will show a strong tendency to be loyal and repeat the purchases of a firm's products and services (Selnes, 1993). Furthermore, Anderson and Sullivan (1993) asserted that customer satisfaction positively affects customers' repurchase behaviour and customers' repurchase behaviour and purchase intention are a kind of customer loyalty. Similarly, Johnson et al (1995) stated that the degree of satisfaction has a strong effect on future expenditure decisions. Indeed, satisfied customers are willing to buy more (Homburg et al., 2005). This is consistent with Ulaga and Eggert (2006), who confirmed that customer satisfaction increases the customer behaviour intention to expand business with the firm and decreases the propensity to leave, and with Fornell et al. (2010), who

argued that improvement in aggregate customer satisfaction has a significant, positive impact on future change in aggregate consumer spending. Other empirical findings, such as of Ham (2003) in the context of higher education in America and of Eggert and Ulaga (2002) in a cross-sectional survey purchasing managers in Germany, supported that a significantly positive relationship between customer satisfaction and loyalty does exist.

Similar to the context of this thesis, Leverin and Liljander's (2006) empirical study, in the context of banks, demonstrated that customer satisfaction with a bank relationship is a good basis for loyalty. Lin et al.'s (2009) empirical finding, in the context of the banking industry in Taiwan, also confirmed that products and services guaranteeing a higher customer satisfaction lead to better customer loyalty and customer maintenance. Higher satisfaction has been viewed to be positively related to higher loyalty. Therefore, totally satisfying customers should be a top priority with all firms (Jones and Sasser, 1995). As customers feel they have received satisfied value, they will reward the firm with loyalty (Barnes, 2000). Even though the link between customer satisfaction and loyalty is not so straightforward and thus challenged, customer satisfaction as a strong predictor for loyalty is widely accepted among researchers. Therefore, the following hypothesis will be investigated.

H_7 : Customer satisfaction has a direct and positive effect on customer loyalty

3.3.7 The Relationship between Customer Loyalty and CLV

Numerous studies have shown a positive linkage between customer loyalty and CLV in marketing - both conceptually and empirically (Anderson et al., 1994; Baldauf et al., 2003; Hallowell, 1996; Garbarino and Johnson, 1999; Gupta and Lehmann, 2003; Reinartz and Kumar, 2000; Reichheld, 1996; Reichheld and Teal, 1996; Reichheld et al., 2000; Roig et al., 2006). Loyal customers are more likely to lead to subsequent profitability for the firms (Kotler et al., 2008; Roger, 1997; Hoisington and Naumann, 2003). As Reichheld (1996) stated, there are some underlying reasons why retained customers are more profitable: 1) customer acquisition costs may be high, so customers

may not become profitable unless they are retained for one or more years, 2) there will be a stream of profits from the customer in each year after acquisition costs are covered, 3) customers buy more over time, so revenues go up; companies become more efficient at serving them, so costs go down, 4) retained and satisfied customers may refer other potential customers, and 5) the relationship has a value to the customer too, so that retained customers tend to become less price-sensitive (p. 39). This is in accordance with Reinartz and Kumar (2000), who argued that a larger proportion of the long-term customers than the short-term customers reveal high profits, and with Roig et al. (2006), who asserted that loyalty leads the customers to increase their volume of business with the firm and thus increases subsequent profits for the firm, and with Baldauf et al. (2003), who emphasized that high level of loyalty should substantially enhance sales, and higher sales are expected to increase firm profits. Furthermore, Reichheld and Sasser (1990) stated that reducing defections by 5% boosts profit 25% to 85%, which means that a relatively small increase in customer loyalty will drive relatively large increase in firm profits. Reichheld and Teal's (1996) empirical study indicated that a 5 % increase in customer retention can have a 30% to 95 % effect on customer net present value and a similar effect on firm profits. Further supporting evidence proposed by Gupta and Lehmann (2003) showed that a 5 % increase in customer retention can create a dramatic increase of 22 % to 37 % in CLV or revenue. Therefore, based on the literature review above, the following hypothesis is proposed.

H_8 : Customer loyalty has a direct and positive effect on customer lifetime value

3.4 Summary

As discussed earlier, the objective of this thesis is to investigate the association between CRM and CLV by exploring mediating roles of customer value, customer satisfaction and customer loyalty in the banking industry in Taiwan. To achieve this goal, twelve hypotheses have been formulated to reflect the causal relationships between these underlying constructs, in which each construct of CRM has been considered as exogenous latent variable, while the remaining constructs are endogenous latent variables. Specifically, the constructs of customer value and customer satisfaction are

incorporated respectively into the proposed theoretical model as the consequences of CRM and as the antecedents to customer loyalty and ultimately CLV. In the following chapter, research methodology used to examine these twelve hypotheses will be discussed. This includes an overview of the research methodology, research design, a quantitative survey methodology, measurement development, data collection tool, pre-test phase, final survey, statistical analysis techniques and finally issues regarding the reliability and the validity of the instrument.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.0 Introduction

This chapter details the research methodology used to empirically investigate the theoretical model proposed in Chapter Three and to address the research questions presented in Chapter One. It is structured in ten sections. Following the introduction, section 4.1 provides an overview of the methodology. Section 4.2 discusses the research design and justifies a quantitative survey methodology used in this thesis. Section 4.3 discusses the development of scale measures of underlying constructs used in the research model. The instrument used to collect the data will be described in section 4.4. Section 4.5 proposes the pre-test phase and the final survey is discussed in section 4.6. Section 4.7 clarifies the statistical analysis techniques used in this thesis and the issues regarding the reliability and the validity of the instrument are discussed in section 4.8. Finally, Section 4.9 summarizes this chapter.

4.1 Overview of Methodology

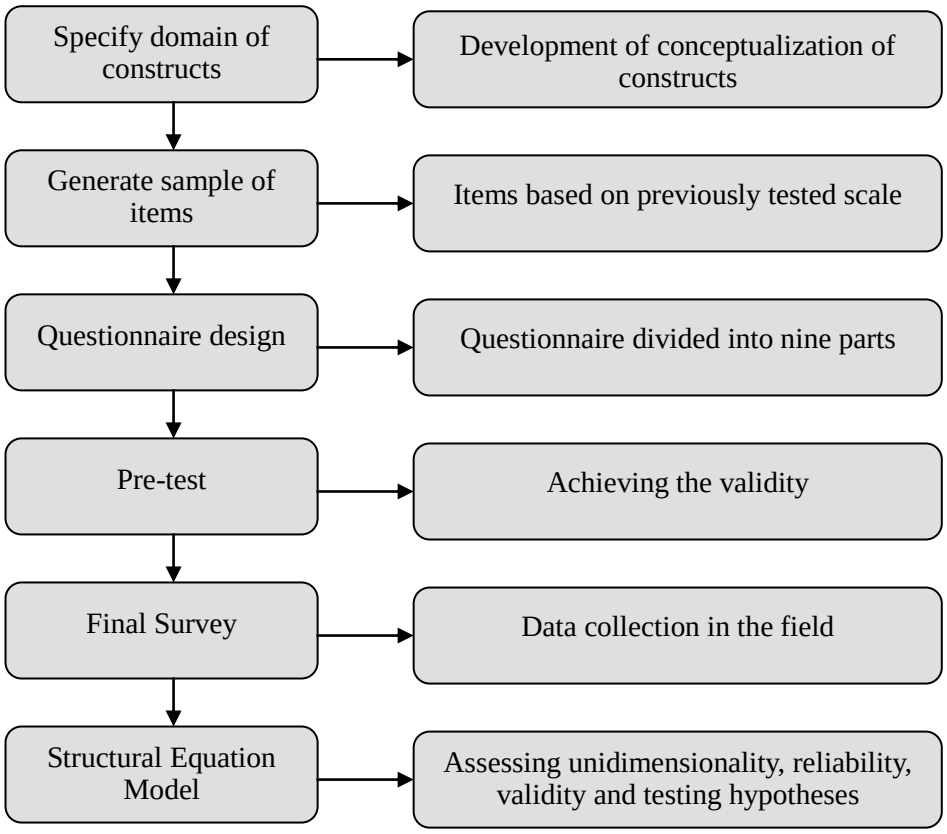
This section gives an overview of the research methodology used to answer the research questions proposed in Chapter One and to empirically test the hypothesized relationships represented in Chapter Three. These steps are depicted in Figure 4.1.

This thesis uses a quantitative survey methodology with self-administered questionnaires to collect data relative to the underlying constructs in the theoretical

model. These constructs include key constructs of CRM (i.e., customer knowledge, CKM capability, customer interaction and customization), customer value, customer satisfaction, customer loyalty and CLV. These were operationalized by a total of 73 multi-item measures on a basis of five-point Likert scales, and these items were mainly adopted from the previous studies. To ensure that the wording of this questionnaire was clear and understandable, a pre-test was conducted to review the instrument for improving the validity of the measures before conducting the final survey. Following pre-testing procedures, the senior manager of each branch and relational customers at the selected banks in Taiwan were surveyed in the final survey.

Two statistical analysis techniques, Statistical Package for the Social Sciences (SPSS) and Structural Equation Modeling (SEM), were chosen to analyse the data. SPSS is a software package for the statistical analysis, such as descriptive statistics (e.g., averages, frequencies), bivariate statistics (e.g., ANOVA, t-test), regression, factor analysis and the graphing of data. In this thesis, it was adopted to explore descriptive data, e.g. means, standard deviations, Skewness and Kurtosis. The SEM by using AMOS 18.0 was used to test the causal relationships among items and construct and among constructs in the proposed research model. In the analysis of SEM, a two-stage approach (i.e., the measurement model and the structural model) recommended by Anderson and Gerbing (1988) was adopted. The analysis specifying which items correspond to each construct was measured in the measurement model. This involved the assessment of the unidimensionality, the reliability and the validity of the underlying constructs. Once the items have been developed in the measurement model, the causal relationships (i.e., hypotheses) among the underlying constructs were examined in the structural model.

Figure 4.1: Overview of Research Methodology



4.2 Quantitative Method

This section proposes a justification for the use of a quantitative method in this thesis and further clarifies the data collection method using self-administered questionnaires from the sample of managers and customers at the selected banks in Taiwan.

According to Punch (1998), the methods used to conduct the research should be consistent with the research questions. This thesis proposed a theoretical model in Chapter Three to test the hypotheses for answering the research questions presented in Chapter One. Therefore, a quantitative method was used to test the hypotheses proposed and then to answer the research questions. A quantitative method, according to Neuman

(1997), is involved in "statistics, hypotheses and variables, and viewed as an organized method for combining deductive logic with precise empirical observations of individual behaviour in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity (p. 63)". It helps the researcher to establish causal relationships between the exogenous and the endogenous constructs on the basis of theory and literature (Amaratunga et al., 2002).

Quantitative researchers generally choose from a specialized, standardized set of data analysis techniques, and manipulate numbers that represent empirical facts to test an abstract hypothesis with a variable construct. They use the symbolic language of statistical correlations between variables to analyze the causal relationships. Though a quantitative method is unable to generate theory or provide the in-depth explanations of qualitative enquiry, it can verify the hypotheses and offer strong reliability and validity (Cavana, 2001; Amaratunga et al., 2002). By contrast, a qualitative method is often inductive, less abstract than statistical analysis and closer to raw data. Qualitative researchers create new concepts and theory by blending together empirical evidence and abstract concepts.

To sum up, a quantitative method focuses on the measurement and the analysis of the causal relationships between variables, whilst a qualitative method stresses interactive processes and events (Denzin and Lincoln, 1994). Because this thesis aims to develop hypotheses and to investigate the causal relationships between the underlying constructs by using SEM approach, a quantitative method was viewed to be appropriate for this thesis.

4.2.1 Data Collection Method

As discussed in Chapter One, the proposed research model was tested by using a sample of senior managers and relational customers at the selected banks in Taiwan. According to Tull and Hawkins (1990), the criteria adopted to evaluate which type of survey to use in a particular situation, include the speed the amount of information obtained, cost, desired accuracy, the acceptable level of non-response and the representativeness of the sample. The size of analysis sample in this thesis involves a large number of respondents up to 200 or more. Following time constraints and costs considerations, a self-administered questionnaires survey was found to be the most practical and suitable way for getting data to evaluate the proposed theoretical model in this thesis. According to Hair et al. (2003), a self-administered questionnaire survey is described as "a data collection technique in which the respondent reads the survey questions and records his or her own responses without the presence of a trained interviewer (p.265)". While a self-administered questionnaire presents a challenge in which they rely on the clarity of the written word more than on the skill of interviewers, this method provides several advantages (Malhotra, 1996; Zikmund, 2003): 1) it can be accomplished quickly relatively inexpensively and efficiently, 2) it can be filled out whenever the respondent has time and 3) it reaches a geographically dispersed sample simultaneously and at a relatively low cost because the interviewers are not required. Though respondents may be unable or unwilling to provide the desired information, this survey is by far the most common method of primary data collection in marketing research (Churchill, 1995; Malhotra, 1996; Sekaran, 2000; Zikmund, 2003).

Therefore, the method of obtaining data in this thesis is based on the self-administered questionnaire survey. This means a structured questionnaire given to a sample of a population and designed to elicit specific information from respondents. In structured data collection a formal questionnaire is prepared and the questions are asked in a prearranged order and thus the process is also directed (Malhotra, 1996). The proposed research model was investigated from a dyadic perspective (i.e., the manager's perspective and the customer's perspective) at the B-to-C market in the banking industry in Taiwan. The questionnaires for the manager and the relational customers at each branch, together with a pre-paid, self-addressed envelope, were posted directly to the manager. Then the questionnaires for relational customers were distributed to them by the front desk staff at each participating branch. Following this, the completed surveys were picked up by the front desk staff after relational customers had finished. Finally, the completed questionnaires for managers and customers were returned to the researcher by post. To prevent a low response rate, a follow-up telephone was conducted to remind the managers and their staff to return the completed questionnaires for improving the response rate. Finally, a call also was made to each of those whose questionnaires have not been received.

4.2.2 Object of Data Collection

As to the selection of the research setting (i.e., country and industry) of this thesis, a review of literature revealed that most CRM research has been studied on the basis of the theoretical frameworks developed in a Western context and paid less attention on this topic in other regions, representing the limitations of generalisability of theory. That is, it is quite possible that the CRM benefits or implications may be different when

considered in different cultures. Therefore, Taiwan was selected as the setting of this thesis for the following reasons. First, Taiwan is representative of Chinese culture in a Chinese-Commonwealth setting (i.e., Mainland China, Hong Kong, Singapore and Macao) where the Chinese culture is dominated by "Kuan-shi" and different from Western cultures (Buttery and Wang, 1999). The essence of "Kuan-shi" focuses on a close personal relationship which goes far beyond the Western concept of networking and reaches down into every aspect of Chinese society (Gilbert and Tsao, 2000). Second, Taiwan is one of the fastest-growing economies of the newly industrialised countries and relatively has a higher tolerance for multicultures. Therefore, Taiwan has a language and cultural advantage in helping multinational companies to carry out ownership advantage, internationalisation advantage and location-specific advantage when they try to invest in the Chinese-Commonwealth market. Third, according to the international credit rating company Standard and Poor, Taiwan's sovereign credit was rated at the level of AA, which is better than other Asia countries. It means that Taiwan has a high credit rating internationally and good financial stability.

Following the selection of Taiwan, firms in a single industry were chosen as the research setting for the following considerations. First, the single-industry design provided the researcher with a better control over market and environmental anomalies and industry effects (Rao, 1994). That is, a single industry would be more focused on a particular manufacturing and service procedure, ways of marketing their offers and managing their customer relationships. Second, it was desirable to study a setting in which: 1) the uses of the key constructs of CRM could be explained and measured clearly, 2) CRM played an important role in the general operations and the survival of business, specifically in high-involvement financial services because their services are

complex, customized and deliver over a continuous stream of transactions and most customers are relatively unsophisticated about the service (Berry, 1995; Eisingerich and Bell, 2007) and 3) reliable and adequate data were available for the purification of measurement scales and hypothesis testing.

Nowadays the banking industry is rushing to become more customer focused and has an early lead in CRM as its transactions are essentially IT-based and contain valuable customer knowledge (Eid, 2007; Peppard, 2000; Ryals and Payne, 2001; Karakostas et al., 2005). The banking industry in Taiwan is considering carefully the sustainability of a long-term customer relationship and thus CRM has been the issue that Taiwanese banks care about the most (Lin et al., 2009). Given the above considerations, the banking industry in Taiwan was selected as the research setting of this thesis.

To examine the validity of the research model, the sample banks participating in this thesis are representative of the banking industry in terms of high quality of customer service and trust, firm profit and business scale. Based on this criterion, four leading banks were selected from 16 financial holding companies because their service quality and profits have ranked top and they are the most trust-worthy and satisfied banks in Taiwanese customers' mind during the past several years. Four leading banks include Yuanta Bank, E. Sun Bank, Chinatrust Bank, and Cathay United Bank. Appendix C.1 presents the selected banks background information, i.e. number of employees and branches, profit, company deposit and asset, honours and awards and business overview**.** Appendix C.2 lists 16 major financial holding companies background information, i.e. name of company, subsidiary, company setup date and website. Accordingly, a total of 438 branches of four leading banks located in seven major cities in Taiwan were

selected to participate in this survey to obtain a representative sample. A senior manager and several relational customers at each branch were chosen as the survey objects and formed the survey population of this thesis. Because the senior manager is usually the head manager of each branch and mainly in charge of all customer services and marketing, they are viewed as the proper and knowledgeable respondents to answer the questions. The branch selection reflects the national representation. On average, each branch employs at least 25 - 35 staff.

In this thesis, a dyad sampling frame was designed for collecting data. The term "dyad" used in this thesis represents a matched set comprising each senior manager and several relational customers at each branch. Accordingly, two samples were developed: one for senior managers and the other for relational customers. The innovation in this thesis was in obtaining data for the constructs of CRM from the senior managers. Data for the constructs of customer value, customer satisfaction, customer loyalty and CLV was obtained from both the senior managers and their relational customers. The instrument for measuring the constructs of customer value, customer satisfaction, customer loyalty and CLV was identical for these two groups. This thesis intends to explore the difference between what banks think they are delivering and what customers actually experience. To identify "relational customers", this thesis applied the definition that "relational customers" are the general public, who has individual business with a particular bank. The individual business includes comprehensive saving account, fixed saving account of more than three years, house mortgage, credit card, mutual fund and one of direct debt accounts for water, electricity and gas costs. This criterion was chosen based on the discussion with the senior managers at the selected banks.

4.3 Scale Development

This section discusses the development of scale items used to measure the constructs in the research model. The underlying constructs comprise customer knowledge, CKM capability, customer interaction and customization, customer value, customer satisfaction, customer loyalty and CLV. The scale items in this thesis were adopted mainly from the relative studies with valid and reliable measures of corresponding constructs in the research model to reflect the extent to which they represent the content of each construct. Thus, the reliability and the validity were also examined to confirm the scales' acceptance.

A total of 73 scale items were used to measure the constructs in the research model. Table 4.1 shows a summary of the number and source of these items used to measure each construct. Some of the constructs (i.e., CKM capabilities, customer interaction and customization) were operationalized by using five-point Likert scales, ranging from (1= strongly disagree) to (5=strongly agree), and others (i.e., customer knowledge, customer value, customer satisfaction, customer loyalty and CLV) were rated on scales ranging from (1=very low) to (5= very high). Respondents were asked to place value on the extent to which they agreed or disagreed by ticking a number on a five-point Likert scale. In addition, the multiple-item measures for each construct were used to provide a comprehensive evaluation and to improve the reliability and the validity of the construct (Nunnally, 1978; Churchill, 1979), while a single-item scale has been criticized due to: 1) having a low correlation with the attribute being measured and tending to relate to other attributes, 2) tending to categorize people into a relatively small number of groups and 3) having considerable measurement errors (Churchill, 1979).

Table 4.1 Total of Scale Items Used in this Thesis

Constructs	Number of Items	Sources
Customer Knowledge	**10 items**	
Knowledge about customer	5 items	Park and Kim (2003), Ö sterle (2001), Salomann et al. (2005)
Knowledge for customer	2 items	Garcia-Murillo and Annabi (2002),
Knowledge from customer	3 items	Gebert et al. (2003)
CKM Capability	**20 items**	
Knowledge Infrastructure Capability	11 items	Cross and Baird (2000), Campbell (2003), Davenport and Prusk, (1997), Minna and Aino (2005), Gold et al. (2001)
Knowledge Processes Capability	9 items	
Customer Interaction	**7 items**	Peppers and Rogers (2011), Barnes (2001)
Customization	**4 items**	Peppers and Rogers (2011), Tu et al. (2001)
Customer Value	**7 items**	
Quality	4 items	Zeithaml (1988), Sweeney and Soutar (2001)
Price	2 items	Jacoby and Olson (1977), Petrick (2002), Nasution and Mavondo (2007)
Reputation	1 item	Dodds et al. (1991)
Customer Satisfaction	**6 items**	Jutla et al. (2001), Croteau and Li (2003)
Customer Loyalty	**7 items**	
Attitudinal loyalty	1 items	Prus and Randall (1995), Jones and Sasser (1996)
Behavioural loyalty	6 items	Reichheld (1996), Jutla et al. (2001) and Kim et al. (2003)
Customer Lifetime Value	**12 items**	
Usage factor	3 items	
Fan identification	1 items	
Product Merchandising	3 items	Hughes (1994), Mcdonald (1996)
Word of Mouth	2 items	
Opportunity Cost	3items	

The Likert scale is a widely used rating scale that requires the respondents to indicate a degree of agreement or disagreement with each of a series of statements about the object (Malhotra, 1996). The Likert scale was selected because it takes less time and is easy to construct and administer. Respondents readily understand how to use the scale, making it suitable for mail, telephone or personal interviews (McCelland, 1994; Churchill, 1995). In the following section, the items to measure the constructs in the research model are further discussed.

4.3.1 Measures of Customer Knowledge

As discussed in Chapter Two, three types of customer knowledge, i.e. knowledge about, for and from customers, were incorporated into the construct of customer knowledge. A scale with a total of ten items was used to assess it on the basis of a five-point Likert scale ranging from "1" (very low) to "5" (very high). These ten items were divided into knowledge about customers (five items), knowledge for customers (two items), and knowledge from customers (three items) (see Table 4.2). These items were mainly developed based on previous studies (Park and Kim, 2003; Salomann et al., 2005; Ö sterle, 2001; Garcia-Murillo and Annabi, 2002; Gebert et al., 2003).

The knowledge about customers scale is designed to ascertain the extent of the fulfilment of knowledge about the diversity of products customers purchase with the bank, customers' contribution to the bank's profit, purchasing patterns, purchasing frequency and purchasing preference. The knowledge for customers scale is used to measure the extent of the fulfilment of knowledge for customers about the bank's products and services, revenue, profit and policy, etc. The knowledge by customers scale reflects the extent of the fulfilment of knowledge from customers' complaints, customers' propositions and customers' claims. As it is this thesis's hypothesis that a bank with better customer knowledge would create higher customer value and satisfaction, this thesis would expect that the respondents would answer "very high". Slight changes in wording of some items were required to fit the banking context. Table 4.2 displays all items.

Table 4.2 Items of Customer Knowledge Scale

Scale Items
In my organization, the extent of the fulfilment of …..
1. Knowledge about the diversity of products customers purchase with your bank
2. Knowledge about customers' contribution to the bank's profit
3. Knowledge about customers' purchasing patterns
4. Knowledge about customers' purchasing frequency
5. Knowledge about customers' purchasing preference
6. Knowledge for customer about the bank's products and services
7. Knowledge for customer about the bank's revenue, profit and policy
8. Knowledge from customers' complaints
9. Knowledge from customers' propositions
10. Knowledge from customers' claims

4.3.2 Measures of CKM Capability

CKM capability refers to the customer-relating capability of organisations that is concerned with both knowledge infrastructure capability and knowledge process capability. Therefore, the construct of CKM capability was conceptualized as comprising knowledge infrastructure capability with a total of 11 items (including organisational structure, culture, technology and supportive systems) and knowledge process capability with a total of 9 items (including knowledge acquisition, conversion, application and protection), on a five-point Likert scale ranging from "1"(strongly disagree) to "5"(strongly agree). These items were adapted from the existing literature (Campbell, 2003; Cross and Baird, 2000; Davenport and Prusak, 1997; Gold et al., 2001; Minna and Aino, 2005). Slight changes in wording of some items were required to fit the banking context.

As it is this thesis's hypothesis that a bank with better CKM capability would create superior value and satisfaction to customers, this thesis would expect that these respondents would answer "strongly agree". Table 4.3 displays all measures.

Table 4.3 Items of CKM Capability Scale

Scale Items for Knowledge Infrastructure Capability
My organization ('s)...
1. Structure facilitates the transfer of knowledge across structural boundaries
2. Structure facilitates the discovery and the creation of new knowledge
3. Structure promotes collective rather than individualistic behaviour
My organization uses technology that allows . . .
4. Employees to collaborate with other persons inside and outside the organisation
5. It to search for new knowledge
6. It to retrieve, use, and circulate knowledge
In my organization . . .
7. Employees understand the importance of customer knowledge to corporate success
8. High levels of participation are expected in capturing and transferring customer knowledge
9. Employees are encouraged to interact and discuss their work with people in other departments
In my organization . . .
10. Senior management clearly supports the role of knowledge management activities for the bank's success
11.There is a standardized employee reward and evaluation systems for sharing knowledge
Scale Items for Knowledge Process Capability
My organization . . .
12. Has capability for acquiring knowledge about our customers
13. Has capability for acquiring knowledge about new products and services within our industry
14. Has capability for converting customer knowledge into the design of new products and services
15. Has capability for absorbing knowledge from both individuals and business partners into the organisation
16. Has capability for transferring organizational knowledge to individuals
17. Has capability for applying knowledge learned from tasks and experiences
18. Has capability for using customer knowledge on organisational activities (e.g., work processes, development of new products and services, solving new problems and adjusting strategic direction)
19. Has capability to protect knowledge from inappropriate use and theft inside and outside the organisation
20. Knowledge that is restricted is clearly identified

4.3.3 Measures of Customer Interaction

As discussed in Chapter Two, customer interaction means a set of functions that allow firms to communicate with customers across multi-channels to meet customers' needs and affect them to behave more profitably. Accordingly, the construct of customer interaction in this thesis was developed to ascertain the extent of a bank's practice in the offered multi-channels and the contents of interaction. Based upon knowledge drawn from Peppers and Rogers (2011) and Barnes (2000), this thesis used six items to assess

customer interaction on the basis of a five-point Likert scale ranging from "1"(strongly disagree) to "5"(strongly agree). As it is this thesis's hypothesis that a better customer interaction would positively affect customer value and satisfaction, this thesis would expect that these respondents would answer "strongly agree". Table 4.4 displays all measures.

Table 4.4 Items of Customer Interaction Scale

Scale Items
My organization . . .
1. Keeps constant dialogue with customers
2. Uses information technology (i.e., Web sites, call centre and email) to strengthen multi-interaction channels with our customers
3. Call our own bank as customer role and ask questions to test and understand our bank's response
4. Follows customer interaction paper trail through our organisation
5. Use incoming call from customers as selling opportunities
6. Compare major competitors' customer service with ours
7. Offers high value-added information for customers

4.3.4 Measures of Customization

The construct of customization was developed to ascertain the extent of a bank's practice in customising its products and services to fit customers' needs. The measures of customization were mainly adopted from Peppers and Rogers (2011) and Tu et al. (2001). Four items were used to assess on the basis of a five-point Likert scale ranging from "1"(strongly disagree) to "5"(strongly agree). As it is this thesis's hypothesis that a bank with better customization ability would create superior value and satisfaction to their customers, this thesis would expect that these respondents would answer "strongly agree". Table 4.5 displays all measures.

Table 4.5 Items of Customization Scale

Scale Items
My organization . . .
1. Finds out actively what our customers need and want
2. Asks our customers what banks can do differently to improve our products and services
3. Customizes paperworks and processes to save individual customer's time and the bank's expense
4. Uses customer knowledge to customize products and services

4.3.5 Measures of Customer Value

As discussed in Chapter Two, customer value was defined as a trade-off between total perceived benefits and total perceived sacrifices of a firm's offering. Customer value is created "when the benefit to customers associated with products and services exceeds the offering's cost to the customer" (Slater and Narver, 2000, p. 120). The measures of customer value, including quality, monetary price, behavioural price (non-monetary) and reputation, were mainly adapted from Jacoby and Olson (1977), Zeithaml (1988), Dodds et al. (1991), Sweeney and Soutar (2001), Petrick (2002) and Nasution and Mavondo (2007). Quality is defined as a customer's judgment about the excellence (Zeithaml, 1988) or utility (Sweeney and Soutar, 2001) of a product or service. Monetary price is the price of a product or service as encoded by the customer (Jacoby and Olson, 1977), or the utility derived from a product or service due to the reduction of its cost (Sweeney and Soutar, 2001). Non-monetary price, the sacrifice of other resources, is the price of obtaining a product or a service, which includes time, energy and effort used to search for the service or product (Zeithaml, 1988). Reputation is defined as the prestige or status of a product or a service based on the image of the supplier (Dodds et al., 1991). It represents what the ‘‘important others’’ think about the respondent for patronizing products and services at the selected bank. Customer value was evaluated by asking participants to rate each item on a scale from 1, "strongly

disagree", 2 "slightly disagree", 3 "neutral", 4 "slightly agree" and to 5 "strongly agree". Table 4.6 displays all measures for the bank and the customer.

Table 4.6 Items of Customer Value Scale

Scale Items for bank	Scale Items for Customer
Relative to major competitors,	**Relative to other major banks,**
1.Your bank delivers services of the highest quality	1.This bank delivers services of the highest quality
2.The quality of your bank's service is consistently high	2.This quality of this bank's service is consistently high
3.Your bank's service is very reliable	3.This bank's service is very reliable
4.Your bank's staff treat customers with great respect	4.This bank's staff treat customers with great respect
5.The price of your bank's service is considered reasonable	5.The price of this bank's service is considered reasonable
6.Your bank's service fits customers' needs	6.This bank's service fits customer's needs
7.Your bank's service is considered prestigious	7.This bank's service is considered prestigious

4.3.6 Measures of Customer Satisfaction

In accordance with the majority of research being done on the satisfaction construct, this thesis defines customer satisfaction as an affective state of mind and a cumulative effect resulting from the appraisal of relevant aspects of a firm's offerings, rather than a satisfaction specified with each transaction. This thesis adopted the metric of customer satisfaction of Jutla et al. (2001) and Croteau and Li (2003), which reflects the ability of the firm's products and services to fulfil the customer's desire, expectation, feedback, needs and communication. Consequently, the measures of customer satisfaction were operationalized in seven items. The descriptors range from 1 to 5 ("very low" to "very high"). Table 4.7 displays all measures for the bank and the customer.

Table 4.7 Items of Customer Satisfaction Scale

Scale Items for Bank	Scale Items for Customer
In my organization,	**For this bank,**
1. Innovative products and services is	1. Innovative products and services is
2. Convenience to the customer is	2. Convenience to the customer is
3. The employees' team spirit is	3. The employees' team spirit is
4. On-time delivery of customer service is	4. On-time delivery of customer service is
5. Anticipation of emerging customers' needs is	5. Anticipation of emerging customers' needs is
6. The rate of the customer's complaints handled is (e.g., processing time, efficiency and attitude)	6. The rate of customer's complaints handled is (e.g., processing time, efficiency and attitude)

4.3.7 Measures of Customer Loyalty

This thesis adopts the combination of the behavioural and the attitudinal construct in conceptualising loyalty rather than viewing it from a single perspective. Customer loyalty in this thesis is defined as the degree to which the customer has exhibited their attitudes and repeat purchase behaviours to reveal the depth and the breadth of their relationships with a bank. Therefore, for measures of customer loyalty seven items were used, mainly based on Prus and Randall (1995), Jones and Sasser (1996), Reichheld (1996), Jutla et al. (2001) and Kim et al. (2003). The descriptors range from 1 to 5 ("strongly disagree" to "strongly agree"). Slight changes in wording of some items were required to fit the banking context. Table 4.8 displays all measures for the bank and the customer.

Table 4.8 Items of Customer Loyalty Scale

Scale Items for Bank	Scale Items for Customer
1. Customers frequently visit your bank	1. I frequently visit this bank
2. The diversity of products customers purchase with your bank is great	2. The diversity of products I purchase with this bank is great
3. The amount of money customers consume in your bank is high	3. The amount of money I consume in this bank is high
4. The period of time when customers frequently visit your bank is long	4. The period of time when I frequently visit your bank is long
5. The patronizing recency of customers (including Internet banking) with your bank is short	5. The period of time between the last two purchases by you with your bank is short
6. The old customers recommend your bank to new customers	6. I recommend this bank to new customers
7. The retention rate for the old customers is high	7. The retention rate for you is high

4.3.8 Measures of Customer Lifetime Value

CLV was operationalized by using a perspective of marketing construct adapted from Hughes (1994) and Mcdonald (1996). The measurement of CLV was divided into two types: 1) “core relation” includes “usages factor” and “fan identification” and 2) “extend relation” includes “product merchandising”, “word of mouth” and “opportunity cost”. A total of 12 items were used to measure CLV. Usage factor means the length and the depth of the relationship between a bank and their customers or the frequency that customers contact with a bank. Fan identification means the customers’ deeply held commitment and the involved degree of emotion. Product merchandising refers to the utilization of the marketing elements to affect the degree of purchasing tendency. Word of mouth demonstrates the degree that customers recommend a bank’s products and services to others. Opportunity cost means the satisfaction degree of customers’ spending time or money as compared with other choices. The descriptors range from “strongly disagree”, to “slightly disagree”, “neutral”, “slightly agree” and finally, “strongly agree”. Table 4.9 displays all measures for the bank and the customer.

Table 4.9 Items of Customer Lifetime Value Scale

Scale Items for Banks
1. Customers would not change their loyalty to your bank for several years in their lifetime
2. Customers would keep doing business with your bank
3. Compared with major competitors, your bank is the best one
4. Customers are proud of being your bank's customers
5. Customers would buy products and services of your bank, through its advertisement
6. Customers would buy the new products and services of your bank due to the bank staffs' promotion
7. I think advertisement has an important affect to the image building of our bank
8. Customers would recommend your bank to their friends
9. Customers are willing to share their experiences of doing business with your bank to others
10. Compared with major competitors, it is worth to pay to your bank's products and services
11. Customers are satisfied with the entire benefits provided by your bank
12. The service provided by your bank is equal to the expense customers had paid
Scale Items for Customers
1. I would not change the loyalty to this bank for several years in my lifetime
2. I would keep doing business with this bank
3. Compared with other banks I ever do business with, this bank is the best one
4. I am proud of being this bank's customer
5. I would buy the products and services of this bank, through its advertisement
6. I would buy the new products and services of this bank due to this bank staffs' promotion
7. I think advertisement has an important affect to the image building of this bank
8. I would recommend this bank to my friends
9. I am willing to share my experiences of doing business with this bank to others
10. Compared with other banks I ever do business with, I think it is worth to pay to this bank's products and services
11. It is satisfied with the entire benefits provided by this bank
12. The service provided by this bank is equal to the expense you had paid

4.4 Questionnaire

The questionnaire, which respondents fill in for themselves, is widely used as an effective method of gathering empirical data from large samples in terms of research time, cost and effort. According to Sekaran (2000), it is "a reformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives" (p.233). The questionnaire in this thesis was divided into nine parts. The first four parts refer to the key constructs of CRM (i.e., customer knowledge, CKM capability, customer interaction and customization). The following four parts cover the aspects of customer value, customer satisfaction, customer loyalty and CLV. The final part refers to the aspect of demographics. The questionnaire for the manager

covers all nine parts (see Appendix B.1 and B.2), whereas it includes the last five parts for the customer (see Appendix B.3 and B.4). These nine parts are briefly explained as below:

Part 1: customer knowledge

The first part is designed to evaluate the extent of the bank's practice in the fulfilment of customer knowledge within organisations. The scale with 10 items reflects three types of customer knowledge, including knowledge about the customer, knowledge for the customer and knowledge from the customer.

Part 2: CKM capability

The second part is designed to ask respondents to evaluate the extent of the bank's practice in the aspects of knowledge infrastructure capability with a total of 11 items and knowledge process capability with a total of 9 items.

Part 3: customer interaction

The third part with 7 items is designed to ask respondents to ascertain the extent of the bank's practice in the offered multi-channels and the contents of communication with its customers.

Part 4: customisation

The fourth part presented in 4 items is designed to measure the extent of the bank's practice in customizing their products and services to fit their customers' needs.

Part 5: customer value

The fifth part with 7 items asks respondents to evaluate the extent of the bank's practice in creating value to customers. These questions reflect the assessment of customer value in quality, price and reputation of the bank's products and services.

Part 6: customer satisfaction

The sixth part operationalised in 6 items is used to evaluate the extent of the bank's practice in fulfilling the customer's needs, expectation, feedback and communication.

Part 7: customer loyalty

The seventh part with 7 items asks respondents to evaluate the extent to which the respondents have exhibited their attitudes and repeat purchase behaviours to reveal the depth and the breadth of their relationships with the bank.

Part 8: customer lifetime value

The eighth part operationalised in 12 items asks respondents to evaluate the extent of their perceptions of CLV in terms of usages factor, fan identification, product merchandising, word of mouth and opportunity cost.

Part 9: demographics

The ninth part of the questionnaire contained several questions asking respondents about their gender, age, educational qualification, job, income, seniority of employment and position.

In addition, regarding the length of the questionnaire, Zikmund (1997) recommended a general rule of thumb that it should not exceed six pages. Frazer and Lawley (2000)

argued that an instrument up to twelve pages in length is generally considered to be appropriate. The questionnaire including the covering letter (see Appendix A.1 and A.2) were neatly organized and conveniently spaced on six pages. Also, it follows Tull and Hawkins's (1990) recommendation that the questionnaire should be designed as moving from one topic to another in a logical manner to represent the research goal, with questions focusing on the completed topic before moving to the next. The wording and the language used in the questionnaire was kept as simple as possible to be understood and completed by all respondents. Questions were clear, answerable, unbiased and suitable to the banking context.

4.5 Pre-Test

According to Zikmund (2003), pre-test is "a trial run with a group of respondents used to screen out problems in the instructions or design of a questionnaire" (p. 229). Pre-test is an important and integral step in the questionnaire development process to ensure the quality and the quantity to satisfy the objectives of the research (Hunt et al., 1982). It refers to the stage in questionnaire design that occurs after the researcher has completed the initial questionnaire, but before the questionnaire is used for the final survey (Reynolds and Diamantopoulos, 1998). It aims to check whether the respondents understand the meaning of each question in terms of its structure and language and to check that the information required from the target population is actually collected through the research instrument and provides informative responses (Reynolds and Diamantopoulos, 1998). That is, pre-test is the use of a questionnaire in a small pilot study to ensure how well the questionnaire works. In the following section, the pre-test sampling frame and procedure are discussed.

4.5.1 Sampling Frame of Pre-Test

In discussing the sampling frame for a pre-test, there are two fundamental issues needed to be considered (Hunt et al., 1982): "who should be the subjects in the pre-test?" and "how large a sample is needed for the pre-test?". For the first issue, the respondents with certain characteristics were deemed to be more efficient at exploring errors in the survey instrument than respondents chosen randomly from the population of interest (Reynolds and Diamantopoulos, 1998). In this thesis, the sampling frame for a pre-test includes the senior managers and their relational customers at the selected banks that correspond with the population to be studied. For the second issue, there is little consistency in the size of pre-test sample (Hunt et al., 1982). Zaltman and Burger (1975) simply recommended a "small" sample. Boyd et al. (1977) indicated that a sample of 20 is adequate. Hunt et al. (1982) stated that the size of pre-test sample should be a function of the instrument and the target population. For example, the long and complex instruments need larger pre-test samples than the short and simple instruments. Accordingly, 40 questionnaires were distributed to senior managers and 50 questionnaires were distributed to customers, aiming for a completion of at least 20 respondents from senior managers and 25 respondents form customers.

4.5.2 Pre-Test Procedures

Different combination approaches, expert panel, interviews and planned field survey methods, have been used to pre-test the questionnaire of this thesis. As outlined in Table 4.10, the first procedure was used to ensure that this instrument could be appropriate for the banking context. The instrument was then distributed to six experts. One was a

professor in the area of marketing at Tainan University in Taiwan, while the other one is at Chienkuo Technology University in Taiwan. The remaining were four practical experts from the selected banks in Taiwan (i.e., Yuanta Bank, E. Sun Bank, Chinatrust Bank and Cathay United Bank). These experts were asked to evaluate the questionnaire in order to assess the relevance of its conceptualisation of marketing research, evaluate the suitability of the terminology to the banking context, provide further suggestions, criticism and comments on the questionnaire and its facets and validate the questionnaire. They identified two items related to customer knowledge, one item related to customer satisfaction, five items related to customer loyalty and two items related to CLV that needed to be reworded to better fit the banking context. In addition, one item was deleted from the construct of customer value as it was viewed identical to another item. The revision of the instrument was made to ensure its relevance to the domain of this thesis and to achieve the content validity.

Following that, five senior managers and five customers were interviewed in the second procedure. The purpose of these interviews was to ask the respondents to identify any problems related to the questionnaire format, wording or design and to address any comments or suggestions. The questionnaire was modified and refined after conducting these interviews. In the final procedure, a total of 40 questionnaires were distributed to senior managers (i.e., Yuanta Bank, E. Sun Bank, Chinatrust Bank and Cathay United Bank) and 50 questionnaires were distributed to customers (i.e., Yuanta Bank and E. Sun Bank). This procedure was conducted during July and August 2010. 21 for manager and 28 for customer usable questionnaires were returned. To assess the reliability of the measures, the value of Cronbach α for all scale items exceeds .70. As to the evaluation of the convergent and the discriminant validity, it was not possible to conduct them

because of the small size of samples. Consequently, they were examined in the SEM analysis in Chapter Five. In all pre-test procedure, minor changes to statement wording and layout were made to the instrument to ensure that the questions were readily understood by the respondents. As no major modifications were needed, a further pre-test was unnecessary.

Table 4.10 Procedures Used in Pre-test

Procedures	Target	Reasons this Procedure Used
1. Panel of experts	Two professors in the area of marketing + four specialists in banking area	1. Assess the relevance of the conceptualisation of marketing research; 2. Evaluate the suitability of the terminology used to the banking context; 3. Provide further suggestions, criticism and comments on the questionnaire and its facets; and 4. Validate the questionnaire
2. Personal interviews	Five personal interviews with bank senior managers + five personal interviews with relational customers	Ask managers and customers to address their comments and identify any problems related to the questionnaire
3. Planned survey (data collection)	Questionnaires distributed to managers and customers	Modify the questionnaire before the final survey and perform analysis

4.6 Final Survey

Following the pre-test, the final survey was conducted in the field. This section starts with a description of its sampling frame and is followed by the discussion of the procedures to administrate the data collection.

4.6.1 Sampling Frame of Final Survey

The sampling used in this thesis was a “purposive sampling”, in which senior managers

and relational customers of the selected banks were surveyed. According to Dillon et al. (1993), the purposive sampling involves "selecting certain respondents for participation in the study presumably because they are representative of the population of interest and/or meet the specific needs of the research study" (p.229). It is a form of convenience sampling in which the population elements are purposely selected based on the judgement of the researcher (Malhotra, 1996). Therefore, the branches of four selected banks which are located in seven major cities in Taiwan were chosen to participate in the final survey for obtaining a representative sample. This widespread sample helps to reduce any potential geographical bias. Therefore, the senior manager and relational customers of each branch formed the survey population of this thesis. This sampling was chosen for use in this thesis because those units contribute to answer the research questions.

4.6.2 Final Survey Procedures

The letter of formal invitation enclosed with the instrument was directly posted to the senior manager of each branch of the selected banks, asking them to participate in this research and also to help distribute questionnaires to customers through their front desk staff. The information illustrates briefly the aim of this research, its significance to them, intended use of data, time and issues related to confidentiality and their voluntary participation. The fieldwork took place in Taiwan during the period of August and October 2010. In order to check whether the number of responses was as desired, the researcher had frequent and direct connections with the senior managers or front desk staff at each participating branch.

In total, 438 questionnaires were distributed to senior managers of each branch at the elected banks (i.e., Yuanta Bank, E. Sun Bank, Chinatrust Bank and Cathay United Bank) and 1040 questionnaires were distributed to customers (i.e., Yuanta Bank and E. Sun Bank), resulting in 252 for managers being returned, 226 of which were usable and 611 for customers being returned, 584 of which were usable. The response rate was considered appropriate and large enough to conduct SEM analysis used in this thesis.

4.7 Data Analysis Method

This section describes and justifies the use of statistical techniques, including the Statistical Package for Social Sciences (SPSS) and the Structural Equation Modeling (SEM).

This thesis involved an analysis of matched-dyads of firm-customer pairs suggested by Deshpandé et al. (1993) and Hartline et al. (2000). This refers to the sampling unit as a "quadrad". Data from firms and customers were analyzed jointly. Specifically, the unit of analysis was the paired sample of 1) a senior manager and 2) the average of several relational customers. In order to form a matched dyad for subsequent statistical analysis, the data from customers under each senior manager was first integrated by averaging the scale scores given by a specific senior manager's customers, for each variable, to fit the requirement of a single pair calculation (Hartline et al., 2000). The basic concept and statistical techniques used in data analysis would be introduced in the following sections.

4.7.1 Preliminary Data Analysis

This thesis uses the Statistical Package for Social Sciences to screen (i.e., data coding, missing data and outliers) and to analyse the data obtained from the questionnaires (i.e., mean, standard deviation, skewness and kurtosis). These analyses give the reader a "snapshot" of the data used in the research model.

4.7.2 Structural Equation Modeling

Following preliminary data analysis, the SEM analysis is conducted. According to Byrne (2001), SEM is "a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon" (p. 3). These abstract phenomena are termed latent variables that can not be observed directly and thus must be operationally defined and linked to observable variables to make their measurement possible (Byrne, 2001). In other words, SEM refers to a collection of statistical techniques that allows a set of relationships between observed variables and latent variables, and between exogenous latent variables and endogenous latent variables to be examined (Tabachnick and Fidell, 2001).

SEM has been widely used as an important statistical analysis tool in academic research. It is a confirmatory method providing a comprehensive means for assessing and modifying theoretical models and appropriate for the simultaneous assessment of the relationships between multiple independent and dependent latent variables (Anderson and Gerbing, 1988; Jöreskog and Sörbom, 1982). Moreover, it can be used to explain

the patterns of a series of inter-related dependence relationships simultaneously between a set of latent constructs, each measured by one or more observed variables (Hair et al., 2003). SEM comprises both the measurement model and the structural model. The measurement model depicts the links between the latent variables and their observed variables. The structural model depicts the links between the latent variables themselves. SEM provides an efficient way of describing the latent structure underlying a set of observed variables. Once the research model is specified, the task of model-test is to determine the goodness of fit between the hypothesized model and the sample data.

It is important to distinguish between the exogenous latent variables and the endogenous latent variables in the SEM model. Exogenous latent variables cause the fluctuations in the value of other latent variables in the model, while endogenous latent variables are influenced by the exogenous variables, either directly or indirectly. SEM also assesses the unidimensionality, the reliability and the validity of each individual construct, an overall test of model fit and individual parameter estimate tests. To accomplish the objectives of SEM analysis, Analysis of Moment Structures (AMOS) statistical software was used to specify the research model in a path diagram in which items (or so called observed variables) correspond to each latent variable and the causal relationships between independent latent variables (i.e., four constructs of CRM) and dependent latent variables (i.e., customer value, customer satisfaction, customer loyalty and CLV). Moreover, the empirical model can be tested against the hypothesized model for goodness of fit. Any causal paths that do not fit with the original hypothesized model can be modified or removed to get a parsimonious model.

4.7.2.1 Two-Stage Structural Equation Modeling

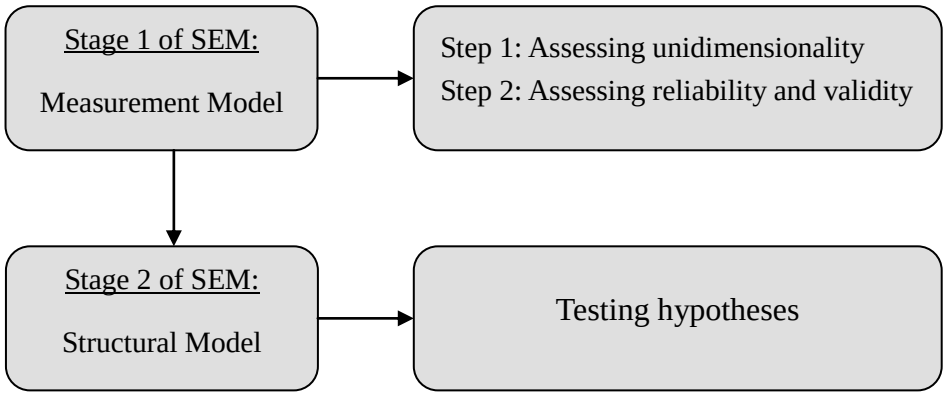
In this thesis, the two-stage SEM approach recommended by Anderson and Gerbing (1982) was adopted, because the accurate representation of the reliability of the items of each construct is best conducted in two stages to avoid any interaction between the measurement model and the structural model (Hair et al., 1995).

As shown in Figure 4.2, the measurement model is first conducted to specify the causal relationships between the observed items and the underlying constructs. It aims to testify the unidimensionality, the reliability and the validity of the latent constructs. The unidimensionality is assessed prior to testing the reliability and the validity (Hair et al., 1995). According to Anderson and Gerbing (1988), the unidimensional measurement models provide more accurate tests of the convergent and the discriminant validity of factor measurement to ensure that a set of items empirically measures a single dimension.

In assessing the unidimensionality, two basic types of factor analyses with SEM, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), are widely used as the analysis tools. EFA is designed for the situation where links between the observed and latent variables are unknown or uncertain (Byrne, 2001). Thus, this analysis proceeds in an exploratory mode to determine how and to what extent the observed variables are linked to underlying constructs. In EFA, these relations are represented by factor loadings. The items designed to measure a latent variable were expected to reveal high loadings on that factor and low or negligible loadings on the other factors. However, according to Anderson and Gerbing (1988), EFA can not assess

the unidimensionality directly, but aims to assess the factor structure of a scale. The factor structure identified by EFA is more likely to represent a poor fit to the same data as assessed by CFA. By contrast, CFA is appropriately used where hypotheses about the grounded theoretical models exist (Bollen, 1989). Thus, in the case of this thesis, CFA is considered a more appropriate technique than EFA for such assessment, because the scale items have been mainly adopted from the previous studies that were well grounded on a theoretical and empirical base. Once the measurement of the undimensionality is achieved, the reliability and the validity are demonstrated. Finally, in the second stage (i.e., the structural model) the causal relationships among the latent constructs in the theoretical model would be identified. Further details about these stages would be discussed in the next chapter.

Figure 4.2 Two-Stage Structural Equation Model Used in this Thesis



4.7.2.2 SEM Assumptions

There are several assumptions needed to be met before conducting SEM. First, SEM requires the sample size to be adequate, because covariance and correlations are less stable when estimated from small sample sizes (Tabachnick and Fidell, 2001; Rigdon,

2005). Lomax (1989), Loehlin (1992) and Ding et al. (1995) suggested that 100 is the minimum sample size to ensure the appropriate use of maximum likelihood (ML), while Boomsma (1987) stated that the sample size is at least 200 for the estimation of SEM by using ML method. Bentler and Chou (1987) suggested that 5 samples for per observed variable is the minimum requirement if the distribution of sample data is normally distributed. Though there is no agreement about sample size, Hair et al. (1995) and Mueller (1997) indicated that a size of between 100 and 200 is ideal for using SEM analysis. Second, apart from the sample size, the normal distribution of the data, the effect of missing data and outliers are assumed. These issues would be discussed in the next chapter under data screening.

4.7.2.3 SEM Diagram

The causal relationships in SEM can be depicted in path diagram. As shown in Figure 4.3, the path diagram consists of the constructs as latent variables (e.g., CK and CKM), measured variables (e.g., X and Y), measurement errors (e), residual errors (ζ), and arrows indicating relationships between the variables. For example, customer knowledge (CK), CKM capability (CKM), customer interaction (CI) and customization (CU), customer value (CV), customer satisfaction (CS), customer loyalty (CL) and customer lifetime value (CLV) are presented as ovals or circles. Measured variable, such as knowledge about customers (X_1), knowledge for customers (X_2), knowledge from customers (X_3), quality (Y_1), price (Y_2) and reputation (Y_3), are presented as rectangles. Measurement errors and residual errors are presented as circles.

The single-headed arrows in the diagram represent the extent to which one variable (construct) is dependent on another. For example, the single-headed arrow linking customer value with customer satisfaction represents a direct relationship that was hypothesized between these two constructs. In addition, as seen in the relationships between CRM's constructs, correlations or covariance between latent variables are represented as double-headed arrows. This is where a relationship between exogenous latent variables was assumed, but no causal relationship was hypothesized. Moreover, measurement errors associated with the measured variables and residual errors associated with the latent variables are included in the model. Measurement errors and residual errors are represented as (e) and enclosed in small circles.

Finally, in addition to the path diagram, the mathematical model also could be used as a means of communication. The structural models in this thesis are represented as below:

$$\eta_1 = \gamma_{11}*\xi_1 + \gamma_{12}*\xi_2 + \gamma_{13}*\xi_3 + \gamma_{14}*\xi_4 + \zeta_1$$
$$\eta_2 = \gamma_{21}*\xi_1 + \gamma_{22}*\xi_2 + \gamma_{23}*\xi_3 + \gamma_{24}*\xi_4 + \zeta_2$$
$$\eta_3 = \beta_{31}*\eta_1 + \gamma_{32}*\eta_2 + \zeta_3$$
$$\eta_4 = \beta_{43}*\eta_3 + \zeta_4$$

Where ξ_i is latent exogenous variable (i.e., CK, CKM, CI and CU);

η_i is latent endogenous variable (i.e., CV, CS, CL and CLV);

γ_{ij} is the path coefficient from latent exogenous variable ξ_j to latent endogenous variable η_i;

β_{ij} is the path coefficient from latent endogenous variable η_j to latent endogenous variableη_i and;

ζ_i is residual error associated with latent endogenous variable η_i.

In addition, the measurement models are represented as below:

$$X_1 = \lambda_{x11}*\xi_1 + \delta_1$$

$X_2=\lambda_{x21}*\xi_1+\delta_2$ (the measurement model of customer knowledge)

$X_3=\lambda_{x31}*\xi_1+\delta_3$

$X_4=\lambda_{x42}*\xi_2+\delta_4$

$X_5=\lambda_{x52}*\xi_2+\delta_5$ (the measurement model of CKM capability)

$X_6=\lambda_{x63}*\xi_3+\delta_6$

$X_7=\lambda_{x73}*\xi_3+\delta_7$

$X_8=\lambda_{x83}*\xi_3+\delta_8$ (the measurement model of customer interaction)

$X_9=\lambda_{x93}*\xi_3+\delta_9$

$X_{10}=\lambda_{x103}*\xi_3+\delta_{10}$

$X_{11}=\lambda_{x113}*\xi_3+\delta_{11}$

$X_{12}=\lambda_{x124}*\xi_4+\delta_{12}$

$X_{13}=\lambda_{x134}*\xi_4+\delta_{13}$ (the measurement model of customization)

$X_{14}=\lambda_{x144}*\xi_4+\delta_{14}$

$X_{15}=\lambda_{x154}*\xi_4+\delta_{15}$

$Y_1=\lambda_{y11}*\eta_1+\varepsilon_1$

$Y_2=\lambda_{y21}*\eta_1+\varepsilon_2$ (the measurement model of customer value)

$Y_3=\lambda_{y31}*\eta_1+\varepsilon_3$

$Y_4=\lambda_{y42}*\eta_2+\varepsilon_4$

$Y_5=\lambda_{y52}*\eta_2+\varepsilon_5$

$Y_6=\lambda_{y62}*\eta_2+\varepsilon_6$ (the measurement model of customer satisfaction)

$Y_7=\lambda_{y72}*\eta_2+\varepsilon_7$

$Y_8=\lambda_{y82}*\eta_2+\varepsilon_8$

$Y_9=\lambda_{y92}*\eta_2+\varepsilon_9$

$Y_{10}=\lambda_{y103}*\eta_3+\varepsilon_{10}$

$Y_{11}=\lambda_{y113}*\eta_3+\varepsilon_{11}$ (the measurement model of customer loyalty)

$Y_{12}=\lambda_{y124}*\eta_4+\varepsilon_{12}$

$Y_{13}=\lambda_{y134}*\eta_4+\varepsilon_{13}$

$Y_{14}=\lambda_{y144}*\eta_4+\varepsilon_{14}$ (the measurement model of CLV)

$Y_{15}=\lambda_{y154}*\eta_4+\varepsilon_{15}$

$Y_{16}=\lambda_{y164}*\eta_4+\varepsilon_{16}$

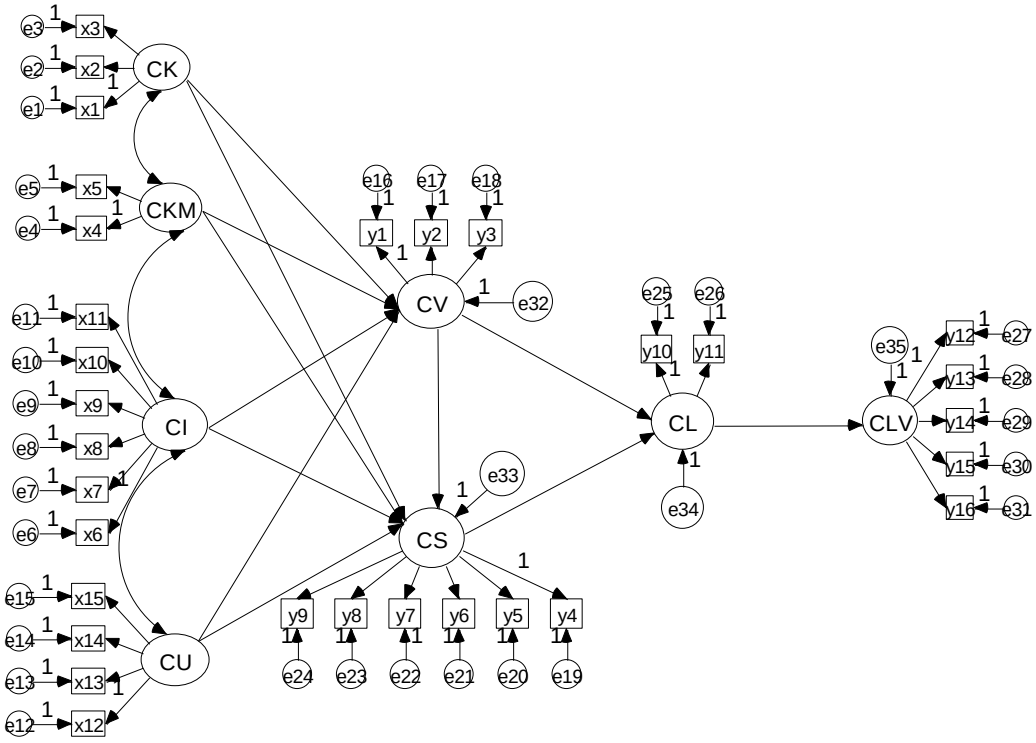
Where δ_i is the measurement error of observed variable X_i;

ε_i is the measurement error of observed variable Y_i;

λ_{xij} is the loading of latent exogenous variable ξ_j for observed variable X_i (the relationship between ξ_j and X_i) and;

λ_{yij} is the loading of latent endogenous variable η_j for observed variable Y_i.

Figure 4.3 The Path Diagram of Research Model



4.7.2.4 Assessment of Overall Model Fit

There are many goodness-of-fit indices to identify whether the hypothetical model fits the sample data or not. Anderson and Gerbing (1988) suggested that "after estimating a measurement model, a researcher should assess how well the specified model accounted for the data with one or more overall goodness-of-fit indices" (P. 416). The model overall fit aims to confirm that the estimated model is based on the observed data

(Diamantopoulos and Siguaw, 2000). Although, there are many statistics used to reflect the overall fit of a model, none of them alone can provide an absolute assurance of the model fit (Jöreskog and Sörbom, 1996). Therefore, in order to reflect diverse criteria and provide the best picture of overall model fit, this thesis adopts those indices that are most commonly used to evaluate model fit. According to Bogozzi and Yi (1988), Diamantopoulos and Siguaw (2000) and Hair et al. (1998), these indices (see Table 4.11) include absolute fit indices (i.e., χ^2, GFI, AGFI and RMSEA), incremental fit indices[1] (i.e., NFI, CFI and TLI) and parsimonious fit indices[2] (i.e., Normed chi-square). Furthermore, according to Hair et al. (2006) and Holmes-Smith (2006), the use of at least three fit indices are recommended by including one in each of the categories of model fit. These individual indices are described in more detail as below.

The chi-square (χ^2) statistic is a test of comparing the goodness-of-fit between the covariance matrix for the observed sample and covariance matrix derived from a theoretically specified structural model (Fornell and Larcker, 1981). If the probability (P) is greater than .05, this indicates that the discrepancy between the actual and the theoretical input matrices is very small. Although χ^2 test is the most used to evaluate goodness-of-fit of the model, it has been criticized for being too sensitive to sample size (Bagozzi and Yi, 1988; Jöreskog and Sörbom, 1996). That is, larger samples produce larger chi-squares that are more likely to be significant, indicating that it is difficult to get an insignificant chi-square (Fornell and Larcker, 1981). According to Bagozzi and Yi (1988) and Hair et al. (1995), as the sample size increases, the chances of rejecting a

[1] Incremental fit indices provide a comparison between the proposed model and the null model. The null model is viewed as the baseline or comparison standard used in incremental fit indices (Hair et al., 1995).

[2] Parsimonious fit indices test the parsimony of the proposed model by evaluating the fit of the model to the number of estimated coefficient required to achieve the level of fit. The parsimony refers to the degree to which a model achieves model fit for each estimated coefficient (Hair et al., 1995).

model (whether true or false) also increase, especially in cases where sample size is over 200. To exclude this interference, the ratio (Normed chi-square; NC) between x^2 (Chi-square) and df (degree of freedom) is commonly employed to be the indicators of goodness-of-fit of the model. A recommended level of acceptance for NC is between 1.0 and 3.0, indicating a good parsimonious fit. However, the researchers use it in conjunction with other indices to evaluate overall fit.

The second measure of overall model fit index used in this thesis is the Goodness-of- Fit Index (GFI). The GFI indicates the relative amount of variance and covariance together explained by the model. This measure ranges from 0 (indicating a poor fit) to 1 (indicating a perfect fit), where a recommended level of acceptance is .90 or greater. The third measure of overall model fit index is Adjusted Goodness-of-Fit Index (AGFI) indicating the relative amount of variances and covariances jointly accounted for by the hypothesised model (Bagozzi and Yi, 1988, p. 79). The quantity 1-GFI is multiplied by the ratio of the model's df divided by df for the base line model, the AGFI is 1 minus this result. Similar to GFI, this measure ranges from 0 to 1, where a recommended level of acceptance is .90 or greater, suggesting meaningful model from a pragmatic point of view. The fourth measure of overall model fit index is Root Mean Square Error of Approximation (RMSEA)**.** This measure assists in correcting the tendency of chi-square to reject specified models. The value of RMSEA less than .08 is commonly acceptable.

In addition, Normed Fit Index (NFI) reflects the proportion to which the researchers' hypothetical model fit compared to the null model. As this index does not consider the degrees of freedom, it has been usually used with the Comparative Fit Index (CFI). CFI compares the covariance matrix predicted by the model to the observed covariance

matrix. Both of NFI and CFI range from 0 (indicating a poor fit) to 1 (indicating a perfect fit), where a recommended level of acceptance is .90 or greater. Another important index used in this thesis is Tuker-Lewis Index (TLI). TLI is used to compare the goodness-of-fit between the proposed hypothetical model and null model. A recommended level of acceptance is .90 or greater. Finally, Normed Chi-Square (χ^2 /df) is used as parsimonious fit indices to evaluate the goodness-of-fit between the matrix of implied variance and covariance (Σ) and the matrix of empirical sample variance and covariance (S). An acceptable level is between 1.0 and 3.0. As this index is also sensitive to the sample size, this thesis uses it in conjunction with other indices to evaluate overall fit.

Table 4.11 Summary of Overall Model Fit Indices

Indices of Evaluation	Parameter	Criteria of Evaluation
Absolute fit indices	Chi-square (χ^2)	P > 0.05
	Goodness-of-Fit Index (GFI)	0.90 or greater
	Adjusted Goodness-of-Fit Index (AGFI)	0.90 or greater
	Root Mean Square Error of Approximation (RMSEA)	< 0.08
	Root Mean Square Residual (RMR)	< 0.05
Incremental fit indices	Normed Fit Index (NFI)	0.90 or greater
	Comparative Fit Index (CFI)	0.90 or greater
	Tuker-Lewis Index (TLI)	0.90 or greater
	Incremental Fit Index (IFI)	0.90 or greater
	Relative Fit Index (RFI)	0.90 or greater
Parsimonious fit indices	Normed Chi-Square (χ^2 /df)	$1.0 \leqq \chi^2$ /df $\leqq 3$
	Parsimony Goodness-of-Fit Index (PGFI)	0.5 or greater
	Parsimony-Adjusted Normed Fit Index (PNFI)	0.5 or greater

4.8 Reliability and Validity

Reliability and validity are central issues in all scientific measurement. Particularly, they are salient because the constructs in social theory are often ambiguous, diffuse and not directly observable. Reliability and validity are separate but closely related concepts, and concern how concrete measures are connected to constructs (Bollen, 1989). Basically, reliability means an indicator's dependability and consistency and validity refers to the match between a construct or the way a researcher conceptualizes the idea in a conceptual definition and a measure (Neuman, 1997). An instrument is valid if it measures what it is supposed to measure and reliable if it is consistent and stable (Sekaran, 1992). Cronbach α, construct reliability (CR) and average variance extracted (AVE) are used to assess the reliability, while content, construct, criterion and external validity are examined for the validity. Since the assessment of reliability and validity are imperative to ensure the study quality, they would be discussed individually in the following sections.

4.8.1 Reliability

According to Nunnally (1978), reliability concerns the extent to which measurements are repeatable - when different persons make the measurement, on different occasions, with supposedly alternative instruments for measuring the same thing. It means that "the information produced by an indicator (e.g., a questionnaire) do not vary because of characteristics of the measurement process or measurement itself (Neuman, 1997, p. 127)". Similarly, Zikmund (2003) defined it as "the degree to which measures are free from random error and therefore yield consistent results" (p. 330). Neuman (1997)

proposed four ways to increase the reliability of measures: 1) clearly conceptualize all constructs, 2) increase the level of measurement, 3) use multiple indicators of a variable and 4) use pretests, pilot studies and replication.

According to Zikmund (2003), reliability can be assessed by three types of scale reliability including: 1) the test-retest reliability, which is concerned with the stability of item response over time. Test-retest method refers to the administration of the same instrument on two different occasions to the same sample of respondents, taking into account the equivalent conditions. However, two main problems arisen by this method make it not suitable for use in this thesis. First, the initial test influences respondents' responses in the following tests because respondents may have learned from the first test to change their attitude. Second, respondents may change their attitude due to the time factor, resulting in lower reliability (Malhotra, 1996; Zikmund, 2003), 2) the alternative-form of reliability, which refers to the extent to which two different statements can be used to measure the same construct at two different times. It implies that two alternative instruments are designed to be as equivalent as possible (Zikmund, 2003). However, it is difficult in all cases to construct two equivalent forms of the same instrument and 3) internal consistency reliability, which is used to assess the homogeneity of the items comprising a scale.

Because the test-retest reliability and the alternative-form of reliability have the abovementioned shortcomings, they were considered to be inappropriate for use in this thesis. Therefore, this thesis refers to the reliability as internal consistency reliability. Internal consistency implies that items are highly inter-correlated (De Vells, 1991; Melewar, 2001). High inter-item correlation infers that items of scale share a common

core and measure the same thing (de Vells, 1991; Melewar and Saunders, 1999; Melewar, 2001). If they are reliable, the items will show consistency in their indication of concept being measured. The most basic method for checking internal consistency is split-half method which involves taking the results obtained from the first half of the scales items and checking them against the results from the other half of the items (Zikmund, 1997). When using this method, one issue about how to properly divide the items should be considered. To avoid this shortcoming, Cronbach α is commonly deemed as an appropriate way to measure the reliability (Nunnally, 1978; Churchill, 1979). Theoretically, Cronbach α estimates the degree of interrelatedness among a set of items designed to measure a single construct (Netemeyer et al., 2003). It is also a measure of the internal consistency of a set of items (Churchill, 1979). Added to this, Cronbach α is important in measuring multi-point scale items (Sekaran, 2000). Because multi-point scale items were employed in this thesis, it will assess the internal consistency of a set of items by measuring their Cronbach α. Therefore, Cronbach α has been used as a verification of the reliability of the composite items comprising each scale for each construct. In assessing reliability by using Cronbach α, while there are different views about levels of acceptance, it is generally accepted that an alpha of 0.70 and over is acceptable (Nunnally, 1978). Accordingly, the value of 0.70 was set as the minimum acceptable level for internal consistency of scales in this thesis.

Additionally, this thesis uses SEM method to conduct the test of the proposed research model. Confirmatory factor analysis (CFA) is used to examine the reliability to ensure that all measures used in this thesis are reliable (Anderson and Gerbing, 1988). Because Cronbach α is not a sufficient condition to assess the unidimensionality, CFA offers a better estimate of reliability than Cronbach α (Steenkamp and Van Trijp, 1991).

According to Hair et al. (1995), CFA would provide the researcher with greater confidence that the individual items are consistent in their measurements. Accordingly, internal consistency reliability in this thesis also has been evaluated by using CFA. In assessing the reliability by using CFA, construct reliability (CR) and average variance extracted (AVE) are two important indicators (Fornell and Larcker, 1981). CR measures the internal consistency of a set of measures rather than the reliability of a single variable to capture the degree to which a set of measures indicates the common latent construct. AVE reflects the overall amount of variance in the items accounted for by the latent construct (Holmes-Smith et al., 2006). According to Bagozzi and Yi (1988), CR should be equal to or greater than .60, and AVE should be equal to or greater than .50. Consequently, this thesis will use Cronbach α, CR and AVE to ensure that the specified items are sufficient in their representation of the underlying constructs. Also, the researcher reviewed the literature and adapted an instrument that had been used previously. The researcher went through drafts of each question and tested early versions by asking academics and practitioners the questions and checking to see whether they were comprehensive and clear. This helped to enhance the reliability of measurement for this thesis.

4.8.2 Validity

Apart from assessing the reliability to ensure that measures are free from random error and thus yield consistent results, validity is another index to validate the constructs (Zikmund, 2003). Validity refers to the preciseness and accuracy of measurement results. That is, it is concerned with what degree the expected targets are actually measured by the designed scale or questionnaire. According to Zikmund (2003), validity is “the

ability of a scale or measuring instrument to measure what is intended to be measured" (p.331). It represents the relationship between the construct and its indicators (Punch, 1998) and depends primarily on the adequacy with which a specified domain of content is sampled (Nunnally, 1978). Nunnally and Bernstein (1994) proposed three important aspects of a valid construct: 1) the construct should be seen to be a good representation of the domain of observable items related to the construct, 2) the construct should well represent the alternative measures and 3) the construct should be well related to other constructs of interest. Generally, there are three types of validity indices which are related to the internal validity of the scales and their respective items, including content validity, criterion-related validity and construct validity (i.e., convergent and discriminant validity). As for the purpose of the generalisability of the research findings, external validity has also been investigated. These validity indices would be used in assessing the validity in this thesis and discussed individually in the following section.

4.8.2.1 Content Validity

Content validity refers to "the subjective agreement among professionals that a scale logically appears to accurately reflect what it purports to measure" (Zikmund, 1997). It focuses on the extent to which a measure represents all faces of a given situation (Lin, 2006, p. 198). That is, it implies that all aspects of the attribute being measured are considered by the instrument. In order to obtain the quality of content validity, the scale items of constructs in research model were mainly developed based on the theoretical basis from an extensive literature review, the adaption of an instrument that had been used previously and the discussions with academics and practitioners for obtaining their advices on the instrument. These helped to enhance the content validity of measurement

for this thesis.

4.8.2.2 Criterion-Related Validity

Criterion-related validity is defined as “the ability of some measures to correlate with other measures of the same construct” (Zikmund, 1997, p. 343). It is used to demonstrate the accuracy of a measure by comparing it with another measure which has been demonstrated to be valid (Lin, 2006). According to Neuman (2003), criterion-related validity uses some standard or criterion to indicate a construct accurately. In other words, the validity of an indicator is verified by comparing it with another measure of the same construct in which a researcher has confidence. There are two types of criterion-related validity, i.e. predictive validity and concurrent validity. The former is an assessment of an individual’s future standing on a criterion variable and can be predicted from present standing on a measure, while the latter is assessed by correlating a measure and a criterion of interest at the same point in time (Bohrnstedt, 1983). According to Zikmund (1997), predictive validity is established when a new measure correlates with a criterion measure taken at the same time, while concurrent validity is established whereby a new measure predicts a future event or correlates with a criterion measure administered at a later time. According to Zikmund (1997), criterion validity is synonymous with convergent validity. Therefore convergent validity has been used in this thesis, assuming that criterion validity was also assessed.

4.8.2.3 Construct Validity

Construct validity is “the ability of a measure to confirm a network of related

hypotheses generated from a theory based on the concepts" (Zikmund, 1997, p. 344). It also refers to "the degree to which a theoretical definition matches an experimentally determined definition" (Lin, 2006, p. 199). That is, construct validity implies to develop correct and adequate operational measures for the concept being tested (Malhotra, 1996). Construct validity are usually assessed by checking both convergent validity and discriminant validity. Convergent validity is the degree to which an operation is similar to (converges on) other operations that it theoretically should also be similar to. That is, it examines whether the measures of the same construct are correlated highly (Sekaran, 2000). Similarity between these two operations is highly expected. Discriminant validity refers to the degree to which the operationalization is not similar to (diverges on) other operationalization that it theoretically should not be similar to. That is, it examines whether the measures of a construct are not correlated highly with other constructs (Sekaran, 2000). Similarity between two operations is not wanted in this case (Lin, 2006, p. 199). Therefore, a measure has convergent validity when it is highly correlated with different measures of similar constructs while a measure has discriminant validity when it has a low correlation with measures of dissimilar concepts (Zikmund, 2003).

According to Anderson and Gerbing (1988), when the measurement model was estimated by using CFA, the validity of a construct was assessed to ensure that the theoretical meaning of a construct is empirically captured by its indicators. The construct validation includes the unidimensionality of a construct, reliability, convergent validity and discriminant validity. In assessing convergent validity, the magnitude of the direct structural relationship between the items and latent construct should be statistically different zero. That is, each item on one factor should have a factor loading of .50 or greater (Hair et al., 1995). Additionally, another evidence of

convergent validity was assessed by the inspection of AVE. Convergent validity is established if the value of AVE exceeds 0.50 for a factor. As for discriminant validity, two methods have been used to assess it in this thesis, including: 1) checking the estimated correlations between the factors, which should not be greater than .85, indicating an acceptable level of discriminant validity and 2) checking the AVE of each construct and its square of the correlations with any other constructs. Evidence of discriminant validity occurs when AVE for each construct exceeds its square of the correlation with any other constructs (Fornell and Larcher, 1981). Apart from the evaluation of convergent validity and discriminant validity, construct validity could be enhanced by assuring that the model is consistent with the data through goodness-of-fit results obtained from CFA (Hsieh and Hiang, 2004).

4.8.2.4 External Validity

The final measure used to validate the measures is external validity. While above discussed validity refers to the internal validity of the scales and their respective items, external validity is related with the extent to which the findings can be generalized to other subjects or groups (Zikmund, 2003). That is, the cause-effect relationships of the research findings are said to possess external validity if they can be generalised beyond the setting in which the study was carried out (Brewer, 2000). Hence, evidence on external validity for this thesis has been obtained because 1) the sample banks are representatives of the banking industry in Taiwan in terms of high quality of customer service and trust, company profit and business scale and 2) the proposed conceptual framework was operationalised by examining it in a real-world setting (Zikmund, 2003). That is, the findings of this research are linked to the real-life environment in which

they occurred.

In summary, the validity should be established before testing the hypothesised relationships between constructs because it helps generalise the findings of the study. For this reason, four types of validity, including content validity, construct validity (i.e., convergent validity and discriminant validity), criterion validity and external validity, were adopted in this thesis.

4.9 Summary

Quantitative analysis used to answer the research questions and to examine the hypotheses has been discussed in this chapter. The scale items of each construct used in the research model have been mainly developed based on previously tested scales. The instrument and the method to collect data in the pre-test and the final survey also have been proposed. Next, the population, sampling and procedures have been identified and the statistical techniques used to empirically test the research hypotheses have been addressed. Finally, the issue related to the reliability and validity has been discussed. In the following Chapter Five, data screening and preliminary data analysis (i.e., descriptive statistics and sample characteristics), will be discussed. Also, the proposed hypothesized model is then empirically tested by using SEM analysis which includes the testing of the measurement model and the structural model.

CHAPTER FIVE: DATA ANALYSIS AND RESULTS

5.0 Introduction

The purpose of this chapter is to present the results of the data analysis and the tests of hypotheses. Following the introduction, section 5.1 discusses the data editing, coding and screening prior to conducting Structural Equation Modeling (SEM) analysis. This is followed by section 5.2 discussing the response rate of distributed questionnaires. The section 5.3 describes the sample characteristics, and the section 5.4 reports the results of the hypothesised model analysed by using SEM. Following this, the sections 5.5 discusses the measurement model analysis, including the assessments of the unidimensionality, the reliability and the validity of the constructs in the research model. Following the validation of all constructs in the measurement model, the structural model examining the hypotheses to answer the research questions is discussed in the section 5.6. The section 5.7 reports the results of testing hypotheses from the bank's perspective, whilst the section 5.8 represents the results of testing hypotheses from both the bank's perspective and the customer's perspective. Following this, a conclusion is presented in section 5.9.

5.1 Data Editing, Coding and Screening

Following the collecting of data from the bank managers and customers, data editing as a part of the data processing and analysis stage was undertaken in order to ensure the omission, completeness and consistency of the data (Zikmund, 2003). According to

Sekaran's (2000) recommendation, this thesis includes all respondents who completed at least 75% of questionnaire answers in the data analysis, whilst those with more than 25% unanswered questions are excluded. Any missing data is viewed as the missing values. Data coding was conducted by assigning the certain number to each answer in the questionnaire allowing the transference of the data from the questionnaire to the form of statistical analysis file, i.e. Excel and SPSS. In this thesis, all question items were pre-coded with numerical values. After the data was typed into the SPSS file for the use of SEM analysis, data editing was conducted to detect any errors in data entry.

Prior to conducting the data analysis, data screening for missing data, outliers and multivariate normality were made to ensure that the data have been correctly entered and that the distribution of variables for the use of further analysis is normal. According to Tabachnick and Fidell (2001), there are two ways used to assess the degree to which there are missing data. These include the evaluation of the amount of missing data and what data are missing. In treating the missing data, the pattern of missing data is paid more attention to than the amount of missing data as the first has an advantage in determining whether or not missing data occur randomly or relate to specific items. As Hair et al., (2006) and Tabachnick and Fidell (2001) stated, it is important that the pattern of missing data should be randomly distributed among the questionnaires. Otherwise, it will lead to biased estimates of results. However, the data screening showed that because there was no specific item that has more than 5% of missing data, it is unnecessary to assess the pattern of missing data (Churchill, 1995). By using SPSS missing data analysis, it demonstrated that there was minimal missing data. Because the deletion of a specific sample due to missing data for specific items would not result in the substantial loss of the overall sample size, this thesis did not consider the method of

replacing missing responses with the variable mean responses for each variable.

In addition, it is necessary to assess the multivariate normality of the distribution of variables before conducting the SEM analysis (Hair et al., 2006; Tabachnick and Fidell, 2001). In this thesis, the skewness and the kurtosis for each variable were used to examine any actual deviation from normality. For the normalized estimate of multivariate skewness and kurtosis, the values should be near zero, if the distribution of observed data is exactly normal. According to Kline (1998), the absolute value of skewness greater than 3.0 or the absolute value of kurtosis greater than 8.0 may indicate an abnormal distribution. Therefore, it was accepted that the absolute value of skewness and kurtosis should not be greater than 3.0 and 8.0. As shown in Table 5.1 and Table 5.2, the absolute values of both skewness and kurtosis were within the acceptable levels, indicating the multivariate normality. The descriptive statistics for the items used in this thesis are also presented in Table 5.1 and Table 5.2.

Apart from the inspection of skewness and kurtosis values, assessing visually normal probability plots for larger sample sizes was recommended by Hair et al. (2006). By conducting SPSS analysis, normal probability plots (or so called normal Q-Q plot[1]) showed that there was no severe deviation from normality because the points of values were clustered around the straight line. Since these variables fitted the requirement of multivariate normality distribution, there was no need to make any adjustments.

[1] Normal probability plot (or so called Q-Q plot) can be used to assess the normality of data. It is a statistical technique that makes assessing the normality easier than others (Norušis, 1995). It shows the observed value and the values are expected if the data are a sample from a normal distribution. The points should cluster around a straight line if the data are normally distributed.

Table 5.1 Measures of the Constructs and Descriptive Statistics for Bank Managers

Items (N=226)	Mean	SD	Skewness	Kurtosis
Customer knowledge				
In my organization, the extent of the fulfilment of…				
1. Knowledge about the diversity of products customers purchase with your bank	3.8274	.8118	-.076	-.749
2. Knowledge about customers' contribution to the bank's profit	3.7124	.8173	-.065	-.588
3. Knowledge about customers' purchasing patterns	3.4867	.7497	-.050	.034
4. Knowledge about customers' purchasing frequency	3.4602	.7185	-.004	-.249
5. Knowledge about customers' purchasing preference	3.5177	.7496	.099	-.319
6. Knowledge for customer about the bank's products and services	4.0088	.7423	-.277	-.442
7. Knowledge for customer about the bank's revenue, profit and policy	3.7965	.7850	-.069	-.599
8. Knowledge from customers' complaint	3.2832	1.162	-.381	-.575
9. Knowledge from customers' propositions	3.5442	.8591	-.287	.231
10.Knowledge from customers' claims	3.5487	.8793	-.249	.090
CKM Capability				
My organization ('s)...				
1. Structure facilitates the transfer of knowledge across structural boundaries	3.9071	.8668	-.976	.951
2. Structure facilitates the discovery and the creation of new knowledge	3.8451	.8834	-.706	.320
3. Structure promotes collective rather than individualistic behaviour	3.9823	.9426	-.896	.473
My organization uses technology that allows…				
4. Employees to collaborate with other persons inside and outside the organisation	3.8009	.8328	-.544	.146
5. It to search for new knowledge	3.7920	.8569	-.441	.076
6. It to retrieve, use and circulate knowledge	3.8717	.8091	-.422	.058
In my organization…				
7. Employees understand the importance of customer knowledge to corporate success	4.2389	.7152	-.755	.984
8. High levels of participation are expected in capturing and transferring customer knowledge	3.9690	.7566	-.321	-.304
9. Employees are encouraged to interact and discuss their work with people in other departments	3.9867	.9356	-.828	.514
In my organization…				
10.Senior management clearly supports the role of knowledge management activities for the bank's success	4.2168	.7899	-.843	.609
11.There is a standardised employee reward and evaluation systems for sharing knowledge	3.6460	1.010	-.600	.036
My organization…				
12.Has capability for acquiring knowledge about our customers	3.8142	.8170	-.533	.467
13.Has capability for acquiring knowledge about new products and services within our industry	3.8451	.8834	-.706	.680
14.Has capability for converting customer knowledge into the design of new products/services	3.6593	.8557	-.527	.303
15.Has capability for absorbing knowledge from both individuals and business partners into the organisation	3.7478	.7906	-.553	.639
16.Has capability for transferring organizational knowledge to individuals	3.6504	.8364	-.462	.149
17.Has capability for applying knowledge learned from tasks and experiences	3.9779	.7913	-.938	1.563
18.Has capability for using customer knowledge on organisational activities (e.g., work processes, development of new products and services, solving new problems and adjusting strategic direction)	3.7611	.8249	-.441	.273
19.Has capability to protect knowledge from inappropriate use and theft inside and outside the organisation	4.2699	.7197	-1.104	2.676
20.Knowledge that is restricted is clearly identified	4.3938	.7054	-1.189	2.122

Table 5.1 (Continued)

Customer Interaction				
My organization…				
1. Keeps constant dialogue with customers	4.2434	.6851	-.772	.990
2. Uses information technology (e.g., Web sites, call centre, email) to strengthen multi-interaction channels with our customers	4.3540	.6853	-.923	.949
3. Call our own bank as customer role and ask questions to test and understand our bank's response	4.3496	.7345	-1.131	1.733
4. Follows customer interaction paper trail through our organisation	4.1991	.7365	-.737	.465
5. Use incoming call from customers as selling opportunities	4.2080	.7810	-.891	.907
6. Call our major competitors to compare their customer service with ours	4.0664	.8590	-.977	1.247
7. Offers high value-added information for customers	4.0221	.7510	-.862	1.808
Customization				
My organization…				
1. Finds out actively what our customers need and want	4.0841	.8522	-1.031	1.442
2. Asks our customers what firms can do differently to improve our products/services	3.9867	.9116	-.862	.603
3. Customizes paperworks and processes to save individual customer's time and the bank's expense	3.8850	.8769	-.891	.886
4. Uses customer knowledge to customize products and services	3.8319	.8984	-.701	.384
Customer Value				
Relative to major competitors,				
1. Your bank delivers services of the highest quality	4.3407	.7910	-1.285	1.801
2. The quality of your bank's service is consistently high	4.2478	.8276	-1.250	1.891
3. Your bank's service is very reliable	4.4602	.6738	-1.129	1.121
4. Your bank's staff treat customers with great respect	4.5221	.6268	-1.177	1.325
5. The price of your bank's service is considered reasonable	4.4204	.6568	-.984	1.070
6. Your bank's service fits customers' needs	4.2212	.7629	-.943	.917
7. Your bank's service is considered prestigious	4.4513	.7179	-1.209	1.067
Customer Satisfaction				
In my organization…				
1. Innovative products and services is	3.7566	.8984	-.428	-.166
2. Convenience to the customer is	3.9779	.8135	-.609	.317
3. The employees' team spirit is	4.3053	.7657	-1.001	1.045
4. On-time delivery of customer service is	4.1283	.7580	-.775	.648
5. Anticipation of emerging customers' needs is	4.0708	.8024	-.858	1.206
6. The rate of customer's complaints handled is (e.g., processing time, efficiency and attitude)	4.3319	.6996	-.719	-.060
Customer Loyalty				
1. Customers frequently visit your bank	4.0664	.6037	-.395	1.151
2. The diversity of products customers purchase with your bank is great	3.8142	.7430	-.605	.808
3. The amount of money customers consume in your bank is high	3.5752	.8144	-.071	-.481
4. The period of time when customers frequently visit your bank is long	4.1416	.6911	-.683	.950
5. The period of time between the last two purchases by customers with your bank is short	3.9071	.7918	-.429	.142
6. The old customers recommend your bank to the new customers	3.8496	.8135	-.367	-.297
7. The retention rate for the old customers is high	4.1106	.7000	-.862	2.018

Table 5.1 (Continued)

Customer Lifetime Value				
1. Customers would not change their loyalty to your bank for several years in their lifetime	3.9292	.8134	-.819	.814
2. Customers would keep doing business with your bank	4.1018	.7139	-.669	.755
3. Compared with major competitors, your bank is the best one	3.9646	.9085	-.827	.558
4. Customers are proud of being your bank's customers	3.9867	.8818	-.798	.495
5. Customers would buy products and services of your bank, through its advertisement	3.8451	.8369	-.711	.632
6. Customers would buy the new products and services of your bank due to the bank staffs' promotion	4.1327	.6395	-.432	.659
7. I think advertisement has an important affect to the image building of our bank	4.0310	.8506	-.977	1.343
8. Customers would recommend your bank to their friends	4.0265	.7655	-.705	.561
9. Customers are willing to share their experiences of doing business with your bank to others	4.0265	.7237	-.679	1.213
10. Compared with major competitors, it is worth to pay to your bank's products and services	4.1195	.7825	-.887	1.421
11. Customers are satisfied with the entire benefits provided by your bank	4.0796	.8016	-1.085	1.871
12. The service provided by your bank is equal to the expense customers had paid	3.9646	.8887	-.850	.573

Table 5.2 Measures of the Constructs and Descriptive Statistics for Bank Customers

Items (N=584)	Mean	SD	Skewness	Kurtosis
Customer Value				
Relative to other major banks,				
1. This bank delivers services of the highest quality	3.9863	.9241	-.653	-.105
2. The quality of this bank's service is consistently high	3.9075	.9252	-.494	-.379
3. This bank's service is very reliable	4.0034	.9279	-.692	.047
4. This bank's staff treat customers with great respect	4.1079	.9095	-.819	.170
5. The price of this bank's service is considered reasonable	3.9709	.9060	-.609	-.140
6. This bank's service fits customer's needs	3.9092	.9094	-.520	-.318
7. This bank's service is considered prestigious	4.0514	.9430	-.792	.173
Customer Satisfaction				
For this bank,				
1. Innovative products and services is	3.5719	.8084	.088	-.338
2. Convenience to the customer is	3.7397	.8887	-.305	-.479
3. The employees' team spirit is	3.9932	.8568	-.397	-.687
4. On-time delivery of customer service is	3.8938	.8602	-.281	-.722
5. Anticipation of emerging customers' needs is	3.8305	.8429	-.223	-.645
6. The rate of customer's complaints handled is (e.g., processing time, efficiency and attitude)	3.9572	.8882	-.417	-.691
Customer Loyalty				
1. I frequently visit this bank	3.6387	.9487	-.433	-.060
2. The diversity of products I purchase with this bank is great	3.4075	.9879	-.288	-.291
3. The amount of money I consume in this bank is high	3.4435	.9625	-.395	-.137
4. The period of time when I frequently visit your bank is long	3.7466	.9752	-.610	.055
5. The period of time between the last two purchases by you with this bank is short	3.7534	.9944	-.614	-.007
6. I recommend this bank to my friends	3.3476	1.0029	-.278	-.128
7. The retention rate for you is high	3.8339	.9379	-.540	-.096
Customer Lifetime Value				
1. I would not change the loyalty to this bank for several years in my lifetime	3.7603	.8925	-.455	.064
2. I would keep doing business with this bank	3.9521	.8595	-.558	-.111
3. Compared with other banks I ever do business with, this bank is the best one	3.7123	.9258	-.375	-.267
4. I am proud of being this bank's customer	3.8099	.9370	-.517	-.279
5. I would buy the products and services of this bank, through its advertisement	3.5240	.9621	-.376	-.187
6. I would buy the new products and services of this bank due to this bank staffs' promotion	3.6267	.9630	-.444	-.245
7. I think advertisement has an important affect to the image building of this bank	3.7620	.8978	-.370	-.259
8. I would recommend this bank to my friends	3.7226	.9598	-.379	-.478
9. I am willing to share my experiences of doing business with this bank to others	3.7945	.9438	-.513	-.156
10. Compared with other banks I ever do business with, I think it is worth to pay to this bank's products and services	3.8596	.9191	-.623	.190
11. It is satisfied with the entire benefits provided by this bank	3.8493	.8890	-.450	-.285
12. The service provided by this bank is equal to the expense you had paid	3.7808	.9073	-.411	-.264

Note: All items were measured by using 5-point Likert scale. SD=standard deviation

5.2 Response Rate

As was discussed in the Chapter Four, the data used in this thesis was collected from senior managers and customers at 4 selected banks in Taiwan. These 4 selected banks, i.e. Yuanta Bank, E. Sun Bank, Chinatrust Bank and Cathay United Bank, have branches located in seven major cities in Taiwan and were selected to participate in this survey to form the survey population of this thesis. Due to the consideration of security of customer data, Chinatrust Bank and Cathay United Bank were unable to help distribute questionnaires to their customers. Therefore, a senior manager at each branch from Yuanta Bank, E. Sun Bank, Chinatrust Bank and Cathay United Bank and customers from Yuanta Bank and E. Sun Bank formed the final representative sample. The data collection was conducted during the period of August and October 2010.

As outlined in Table 5.3, total 438 questionnaires for senior managers (72 for Yuanta Bank, 107 for E. Sun Bank, 111 for Chinatrust Bank and 148 for Cathay United Bank) and 1040 questionnaires for customers (464 for Yuanta Bank and 576 for E. Sun Bank) were distributed individually. Of the 438 for senior managers, 252 surveys were returned. Twenty-six surveys were deleted due to the uncompleted answers, resulting in an effective sample of 226 usable completed questionnaires (54 from Yuanta Bank, 69 from E. Sun Bank, 46 from Chinatrust Bank and 57 from Cathay United Bank). This represented an effective response rate of 51.6%. Of the 1040 for customers, 611 surveys were returned. Twenty-seven surveys were deleted, resulting in an effective sample of 584 usable completed questionnaires. This represented an effective response rate of 56.1%. On average, five customers for each senior manager (584 /123) at each branch received the questionnaire from Yuanta Bank and E. Sun Bank. The response rate of this

thesis is considered appropriate and the sample is large enough to conduct SEM analysis used in this thesis.

Table 5.3 Sample Size and Response Rate

Characteristic	Yuanta Bank	E. Sun Bank	Chinatrust Bank	Cathay United Bank	Total
Financial service	Comprehensive bank company	Comprehensive bank company	Comprehensive bank company	Comprehensive bank company	
Object surveyed	A senior manager of each branch and customers	A senior manager of each branch and customers	A senior manager of each branch	A senior manager of each branch	
Questionnaires surveyed (No. manager/ customer) (per cent)	72/464 16.5%/44.6%	107/576 24.4%/55.4%	111 25.3%	148 33.8%	438/1040 100%
Questionnaires returned (No. manager/ customer) (per cent)	56/250 22.2%/41%	72/361 28.6%/59%	51 20.2%	73 30%	252/611 100%
Usable returns (No. manager/ customer) (per cent)	54/239 23.89%	69/345 30.53%	46 20.35%	57 25.22%	226/584 100%
Response rate (per cent)	75%/51.5%	64.5%/62.7%	41.4%	38.5%	51.6%/56.1 %

5.3 Sample Characteristics

As illustrated in Table 5.4, the results of sample characteristics for customers showed differences in the demographics of the respondents, including gender, age, income, educational qualification and occupation. The number of male respondents was higher than female, representing a ratio of 46.3% and 53.7%, respectively. The highest percentages of age were between 35- 44 years (32.8%) and between 25- 34 years (29.8%), respectively. With respect to education qualification, 51.2% of respondents had completed at least a university degree and another 28.4% of respondents had got a degree of Junior college. Table 5.4 also indicates that the highest percentage of

occupation was for the customers employed in the financial industry, representing 22.1% of the sample. The lowest percentages were for respondents working in the agricultural industry (1.2%) and in sports, leisure, tourism and recreation (3.4%), respectively. In addition, the highest percentage of monthly income was between NT 30001 - NT 40000 (30.9%) and 31% of respondents was beyond the level of NT 40000. Finally, Appendix C. 3 represents survey respondents (bank managers) background information.

Table 5.4 Profile of Respondents for Bank Customers

Demographic Profile	Number of Respondents (N=584)	Valid Percentage (%)
Gender		
Male	266	46.3
Female	309	53.7
Age		
Up to 25	62	10.7
25-34	182	31.3
35-44	191	32.8
45-54	107	18.4
55-64	32	5.5
65+	8	1.4
Education qualification		
Junior high school	22	3.8
Senior high school	96	16.6
Junior college	165	28.4
University	245	42.2
Graduate school +	52	9.0
Occupation		
Military, Government, and Education	23	3.9
General manufacturing industry	119	20.4
Electronics industry	48	8.2
Financial industry	129	22.1
Retailing	52	8.9
Agricultural industry	7	1.2
Sports, Leisure, Tourism, and Recreation	20	3.4
Self employed	61	10.4
Others	125	21.4
Monthly Income		
Below NT 20000	48	8.2
NT 20001 - NT 30000	174	29.8
NT 30001 - NT 40000	180	30.9
NT 40001 - NT 50000	97	16.6
NT 50001 - NT 60000	41	7.0
NT 60001 - NT 70000	14	2.4
NT 70000 +	29	5.0

5.4 Results of Structural Equation Modeling from the Bank's perspective

As discussed in section 4.8, the structural equation modeling (SEM) is used to test the hypothesized causal relationships in the theoretical model by using AMOS 18.0. The two-stage approach of SEM analysis (the measurement model and the structural model) recommended by Anderson and Gerbing (1988) was adopted. In the measurement model (first stage), this analysis specifies the causal relationships between the observed variables and the underlying theoretical constructs by using confirmatory factor analysis (CFA). Following this, the structural model (second stage) was conducted to specify the causal relationships between the underlying exogenous constructs and endogenous constructs. Exogenous constructs included customer knowledge, CKM capability, customer interaction and customization, whereas endogenous constructs covered customer value, customer satisfaction, customer loyalty and CLV. Analyses and results of these two stages are further discussed next.

5.5 Measurement Model Analysis

The measurement model is used to examine how the observed variables depend on latent variables (or so called unobserved variables). In other words, the measurement model specifies the pattern by which each item is loaded onto latent variables. Therefore, each of the constructs in the research model, including customer knowledge, CKM capability, customer interaction, customization, customer value, customer satisfaction, customer loyalty and CLV, was individually analysed in a separate measurement model. If the results are not consistent with the requirements of a prior specified measurement

model, then the measurement model should be respecified and reanalysed (Hair et al., 2006; Tabachnick and Fidell, 2001). According to Anderson and Gerbing (1988), when the measurement model was estimated, a construct was assessed to ensure that the theoretical meaning of a construct is empirically captured by its indicators. Hence, two steps have been used to evaluate the validation of each construct in the measurement model. The first step evaluates the unidimensionality of each factor and the second step assesses the reliability and the validity of each construct. In the following section these two steps are discussed.

5.5.1 Assessment of Unidimensionality

This section discusses the identification of the measurement model for each underlying construct in the research model with a discussion of the path diagram indicating the relationships between the items and latent construct. The unidimensionality indicates whether the items measure only one factor (Croteau and Li, 2003). Accordingly, the multiple item scales used to measure each factor in the measurement model are specified and the procedures of modifying the measurement model are discussed.

Each of the constructs in the research model was assessed for the unidimensionality in a separate measurement model. As depicted in Figures 5.1 to Figures 5.8, previously developed items are viewed as the observed variables (also called manifest variables) and diagrammed as rectangles. The initial and final items for each construct were shown in Table 5.5 to Table 5.12. In the path diagram, the single-headed arrows are used to make the linkages between latent variables (also called the factors) and their observed variables (items) and between the measurement errors and their individual indicators.

Specifically, the single-headed arrows pointing from the enclosed error terms indicate the impact of the measurement error on the observed variables and the single-headed arrows leading from latent variables indicate the impact of latent variables on the observed variables. Instead, the curved double-headed arrows represent the correlations or the covariances between the pairs of the factors (latent variables), but no theoretical relationships that one of these factors causes the other. The score values on the arrows connecting latent variables with their items illustrate the items loadings, indicating the magnitude of expected change in the observed variables for every change in the related latent variable (Byrne, 2001). The values of squared multiple correlations appear at the edges of the items, and the values next to the curved double-headed arrows are correlations between the latent variables.

In each measurement model, multiple items are used to measure each factor to allow the most unambiguous assignment of meaning to the estimated constructs (Anderson and Gerbing, 1988). According to Kline (2005), "if a standard CFA model with a single factor has at least three indicators, the model is identified. If a standard model with two or more factors has at least two indicators per factor, the model is identified." (p.172). Bentler and Chou (1987) also suggested that for relatively small data sets, 20 variables at most in a measurement model are suggested to measure no more than five to six constructs, each of which is assessed by three to four indicators. This is because too large a number of concepts would result in the difficulty in interpreting the results and their statistical significance (Reisinger and Turner, 1999). Furthermore, in confirming the measurement model, it may be necessary to remove the redundant items in the scale to obtain parsimonious unidimensional constructs (Anderson and Gerbing, 1988).

Accordingly, two main considerations are recommended to explain the rationale of the assessment of the unidimensionality (Hair et al., 2006; Kline, 2005; Tabachnick and Fidell, 2001). First, the standardised items loadings to measure a proposed underlying factor should be greater than .50. Second, the estimated correlations between the factors should be less than .85, to make them distinguishable. These two indices should be considered in conjunction with the overall goodness-of-fit indices to judge the acceptance of the unidimensionality for each measurement model.

Moreover, the inspections of the standardised residual and modification indices (MI) are used to assess the goodness-of-fit of model (Jöreskog and Sörbom, 1993; Hair et al., 1995). The standardised residual refers to the difference between sample covariances and implied covariance. Modification index is an estimate of the expected decreases in χ^2 value that would result if a corresponding parameter was to be freed to the model. Standardised residuals more than ±2.58 are indicative of a specification error in the model, whereas a modification index value greater than 3.84 (Hair et al., 1995) or greater than 7.82 (Jöreskog and Sörbom, 1993) shows that the χ^2 value would be significantly reduced at least as far as the value of index and the hypothesized model would be significantly improved when the corresponding parameters are freed. Importantly, the modifying model should be based on SEM principles and theoretical justification. It is inappropriate that the researcher modifies model solely based on data-driven grounds in an attempt to get a fit model (Holmes-Smith et al., 2006).

Finally, a consideration to assess the measurement model is the choice of parameter estimates methods. These include Maximum Likelihood (ML), Generalized Least Squares (GLS), Unweighted Least Squares (ULS), Scale-free Least Squares (SFLS),

Instrumental Variables (IV), Two-stage Least Squares (TSLS) and Asymptotically Distribution Free (ADF). Under the assumption of a multivariate normal distribution of the observed data, according to Anderson and Gerbing (1988), ML has "the desirable asymptotic, or large-sample, properties of being unbiased, consistent, and efficient" (p. 413). Also, with the consideration of sample size in this thesis, ML[2] was deemed as most appropriate parameter estimation method. In the following section, the results of testing the unidimensionality of each construct and the assessment of each measurement model are discussed.

5.5.1.1 Customer Knowledge

The construct of customer knowledge was measured by using three separate factors, including knowledge about the customer (kac), knowledge for the customer (kfc) and knowledge by the customer (kbc). Each of these factors has been measured by a number of items. In total, 10-items were used to measure the constructs of customer knowledge. Knowledge about the customer was measured by five items labelled Kac1, Kac2, Kac3, Kac4 and Kac5; knowledge for the customer was measured by two items labelled Kfc6 and Kfc7; and knowledge by the customer by three items labelled as Kbc8, Kbc9 and Kbc10 (see Table 5.5 for items labels).

[2] ML is defined as describing "the statistical principle that underlies the derivation of parameter estimates: the estimates are the ones that maximize the likelihood (the continuous generalization) that the data (the observed covariance) were drawn from this population (Kline, 2005, p.112).

Although standardised parameter estimates were all significant ($p < 0.001$), the results of the CFA showed that the initial measurement model needed to be modified. The chi-square was statistically significant because P value is less than .05. (χ^2 = 157.673, df =32, χ^2 /df = 4.927, P = .000). The GFI = .869, AGFI = .774, NFI = .861, CFI = .885, TLI = .838 and RMSEA = .132 (see the discussions of overall model goodness-of-fit indices in section 4.7.2.4). The intercorrelations among these three factors were lower than .85, indicating good discriminant validity. Given the fact that most of the above indices were not within an acceptable level, further model modification was conducted.

In checking standardised residual values, the residual value of Kac1 and Kac2 were not within the threshold (less than ±2.58). Therefore, these two items were removed to increase goodness-of-fit of model. Meanwhile, modification indices demonstrated that the values of MI between Kbc10 and Kac4, and between Kfc7 and Kbc8 had unacceptable values (higher than 3.84), indicating the existence of a relationship between these items. Accordingly, by freeing the corresponding parameter with the largest modification index, the χ^2 will drop at least as far as the value of index and the model would be significantly improved. Thus, these corresponding parameters were freed in the modification process to drop the χ^2 value for gaining a more parsimonious model. As the remaining items had the highest initial loadings, the meaning of these three factors had been preserved by these items.

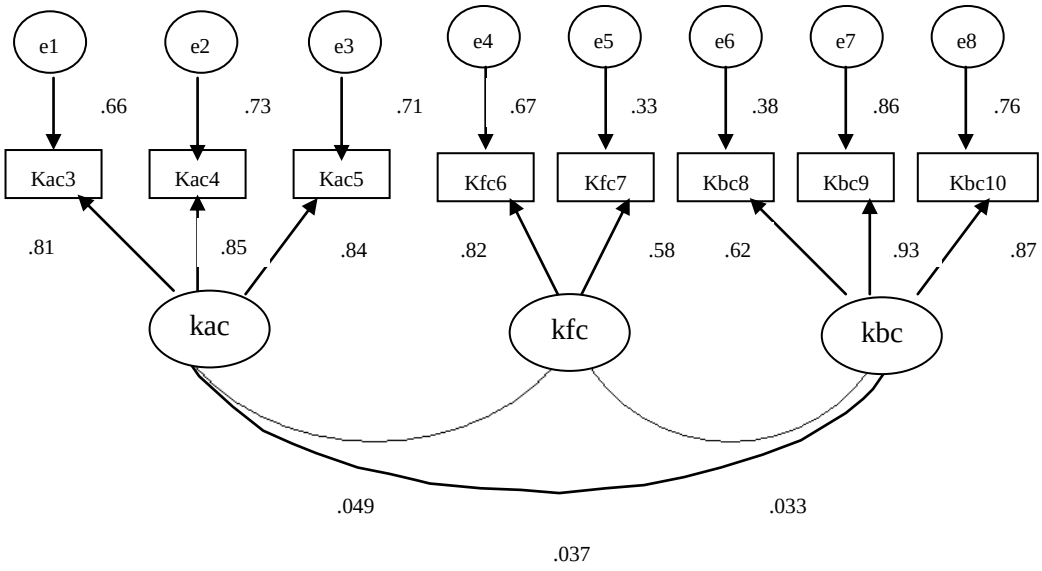
Following the modification process described above, goodness of fit indices were improved. The modified model showed a better fit to the data (χ^2 = 14.684, df =15, χ^2 /df = .979, P = .474). P value is great than .05. The GFI = .984, AGFI = .961, NFI = .982, CFI = 1.000, TLI = 1.000 and RMSEA = .000 (see Appendix D.1 for the

original statistical output). These values indicated that this modified model fits adequately to the data. Given that the modified model fits the data adequately and the correlations between the underlying factors are less than .85, no further adjustments were required. As depicted in Figure 5.1, the final model was assessed by three items measuring knowledge about customers (i.e., Kac3, Kac4 and Kac5), two items measuring knowledge for customers (i.e., Kfc6 and Kfc7) and three items measuring knowledge from customers (i.e., Kbc8, Kbc9 and Kbc10). The standardised factor loadings for these items were all higher than the recommended level of .50 and were statistically significant (see Figure 5.1), providing unidimensional scales for each of these three factors.

Table 5.5 Customer knowledge Items and their Description

Original Item	Item Label	Deleted Item
1. Knowledge about the diversity of products customers purchase with your bank	Kac1	Deleted
2. Knowledge about customers' contribution to the bank's profit	Kac2	Deleted
3. Knowledge about customers' purchasing patterns	Kac3	
4. Knowledge about customers' purchasing frequency	Kac4	
5. Knowledge about customers' purchasing preference	Kac5	
6. Knowledge for customer about the bank's products and services	Kfc6	
7. Knowledge for customer about the bank's revenue, profit and policy	Kfc7	
8. Knowledge from customers' complaint	Kbc8	
9. Knowledge from customers' propositions	Kbc9	
10. Knowledge from customers' claims	Kbc10	

Figure 5.1 Measurement Model of Customer Knowledge



χ^2 = 14.684, χ^2 /df = .979, GFI = .984, AGFI = .961, NFI = .982, CFI = 1.000, TLI = 1.000 and RMSEA = .000

5.5.1.2 CKM Capability

The measurement model of the CKM capability was analysed by using two factors, knowledge infrastructure capability and knowledge processes capability. As outlined in Table 5.6, a total of 20-items represented the two factors of CKM capability subject to CFA. Knowledge infrastructure capability was measured using eleven items (Kic1 to Kic11) and knowledge processes capability was measured using nine items (Kpc12 to Kpc20).

CFA results demonstrated that the initial measurement model needed to be respecified. The chi-square was significant (χ^2 = 811.486, df =169, χ^2 /df = 4.802, P = .000). The GFI = .724, AGFI = .657, NFI = .763, CFI = .801, TLI = .776 and RMSEA = .130. Given the fact that most of above indices were not acceptable, further model

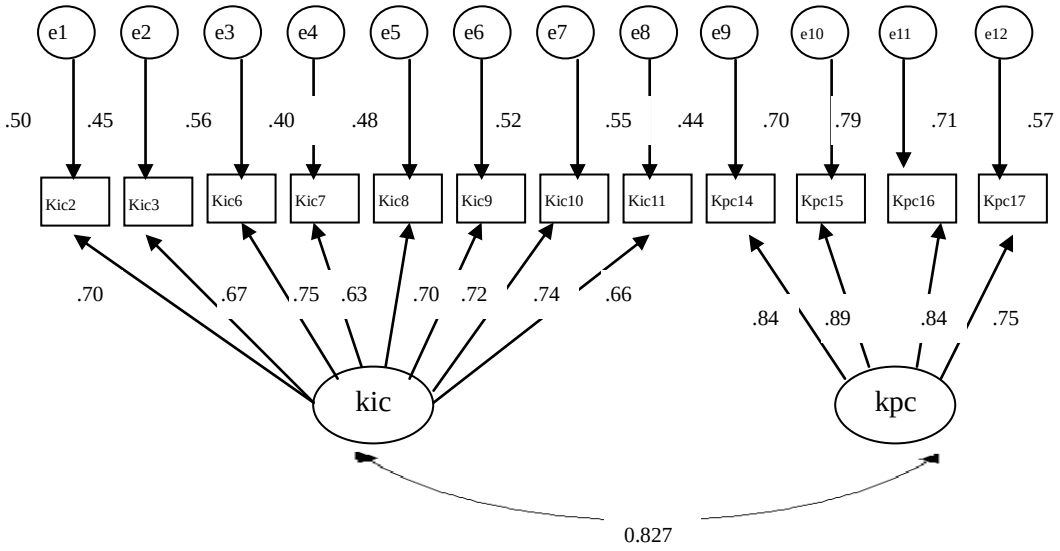
modification was conducted to make a better fit and parsimonious model. This assessment involved inspection of standardised residual values and modification indices, and the deletion of highly correlated items. By doing this, it has been found that most indices were within the acceptable level (χ^2 = 70.941, df =45, χ^2 /df =1.576, P = .008, GFI = .953, AGFI = .918, NFI = .958, CFI = .984, TLI = .976 and RMSEA = .051) (see Appendix D.2 for the original statistical output). Although the χ^2 value was still statistically significant (P<.05), the modified model could be judged as providing an acceptable fit as the chi-square estimate rejecting valid models in large sample size is commonly accepted (Bagozzi and Yi, 1988). Also, to exclude this interference, this thesis employs the ratio of χ^2 to df to be the indicator of goodness-of-fit of the model. The value of χ^2 /df (1.576) is less than 3.0, indicating an acceptable model fit.

This procedure resulted in removing three items from the knowledge infrastructure capability (i.e., Kic1, Kic4 and Kic5) and five items (i.e., Kpc12, Kpc13, Kpc18, Kpc19 and Kpc20) from the knowledge processes capability for further analysis. The remaining items of the knowledge infrastructure capability and the knowledge processes capability still capture the nature of these two factors. Given that the model fits the data adequately and the correlation (.82) between two factors is less than .85, no further adjustments were required. As presented in Figure 5.2, the modified model was represented with eight items of knowledge infrastructure capability and four items of knowledge processes capability. The standardised factor loadings for these items were greater than .50 and the standardised parameter estimates for these items were statistically significant (P<0.001), providing unidimensional scales for each of the two factors.

Table 5.6 CKM Capability Items and their Description

Original Item	Item Label	Deleted Item
1. Structure facilitates the transfer of knowledge across structural boundaries	Kic1	Deleted
2. Structure facilitates the discovery and the creation of new knowledge	Kic2	
3. Structure promotes collective rather than individualistic behaviour	Kic3	
4. Employees to collaborate with other persons inside and outside the organisation	Kic4	Deleted
5. It to search for new knowledge	Kic5	Deleted
6. It to retrieve, use, and circulate knowledge	Kic6	
7. Employees understand the importance of customer knowledge to corporate success	Kic7	
8. High levels of participation are expected in capturing and transferring customer knowledge	Kic8	
9. Employees are encouraged to interact and discuss their work with people in other departments	Kic9	
10. Senior management clearly supports the role of knowledge management activities for the bank's success	Kic10	
11.There is a standardised employee reward and evaluation systems for sharing knowledge	Kic11	
12. Has capability for acquiring knowledge about our customers	Kpc12	Deleted
13. Has capability for acquiring knowledge about new products/services within our industry	Kpc13	Deleted
14. Has capability for converting customer knowledge into the design of new products and services	Kpc14	
15. Has capability for absorbing knowledge from both individuals and business partners into the organisation	Kpc15	
16. Has capability for transferring organizational knowledge to individuals	Kpc16	
17. Has capability for applying knowledge learned from tasks and experiences	Kpc17	
18. Has capability for using customer knowledge on organisational activities (e.g., work processes, development of new products and services, solving new problems and adjusting strategic direction)	Kpc18	Deleted
19. Has capability to protect knowledge from inappropriate use and theft inside and outside the organisation	Kpc19	Deleted
20. Knowledge that is restricted is clearly identified	Kpc20	Deleted

Figure 5.2 Measurement Model of CKM Capability



χ^2 = 70.941, χ^2 /df =1.576, GFI = .953, AGFI = .918, NFI = .958, CFI = .984, TLI = .976 and RMSEA = .051

5.5.1.3 Customer Interaction

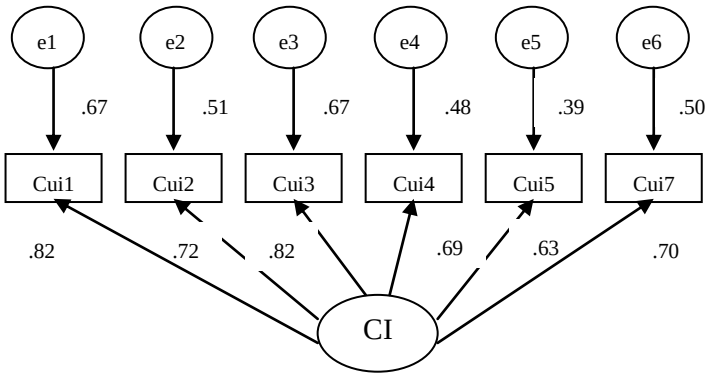
The measurement model of customer interaction was measured by using seven items (Cui1 to Cui7). CFA results demonstrated that the initial measurement model needed to be respecified. The chi-square was significant because P value is less than .05. (χ^2 = 50.957, df =14, χ^2 /df = 3.640, P = .000). The GFI = .943, AGFI = .887, NFI = .927, CFI =.945, TLI = .918 and RMSEA = .108. Given the fact that some of above indices (P value, χ^2 /df, AGFI and RMSEA) were not within an acceptable level, further model modification was conducted to make a better fit. This assessment involved the inspection of modification indices and the deletion of highly correlated items. By doing this, it has been found that all the values were within the acceptable level (χ^2 = 3.926, df =7, χ^2 /df =.561, P = .788, GFI = .994, AGFI = .983, NFI = .993, CFI = 1.000, TLI =

1.012 and RMSEA = .000) (see Appendix D.3 for the original statistical output). The chi-square was statistically insignificant (P = .788), and all indices were within an acceptable level, representing an acceptable goodness-of-fit of model. One item (Cui6) was removed, and thus six items were used for further analysis (see Table 5.7). As illustrated in Figure 5.3, the modified model was represented with six items and the standardised factor loadings for these items were all higher than .5. This indicates that the standardised parameter estimates for these measures were deemed to be statistically significant (P<0.001), providing a unidimensional scale.

Table 5.7 Customer Interaction Items and their Description

Original Item	Item Label	Deleted Item
1. Keeps constant dialogue with relational customers	Cui1	
2. Uses information technology (e.g., Web sites, call centre and email) to strengthen multi-interaction channels with our relational customers	Cui2	
3. Call our own bank as customer role and ask questions to test and understand our bank's response	Cui3	
4. Follows customer interaction paper trail through our organisation	Cui4	
5. Use incoming call from customers as selling opportunities	Cui5	
6. Call our major competitors to compare their customer service with ours	Cui6	Deleted
7. Offers high value-added information for customers	Cui7	

Figure 5.3 Measurement Model of Customer Interaction



χ^2 = 3.926, χ^2 /df =.561, GFI = .994, AGFI = .983, NFI = .993, CFI = 1.000, TLI = 1.012 and RMSEA = .000

5.5.1.4 Customization

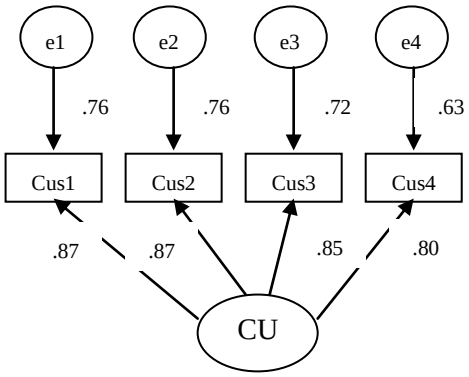
The measurement model of customisation was measured by using 4 items (Cus1 to Cus4). CFA results demonstrated that the initial measurement model needed to be respecified. The chi-square was statistically significant (χ^2 = 31.194, df =2, χ^2 /df = 15.5970, P = .000). GFI = .930, AGFI = .650, NFI = .951, CFI =.953, TLI = .860 and RMSEA = .255. Given the fact that some of above indices were not acceptable, further model modification was conducted. This assessment involved the inspection of modification indices. The values of MI (23.06) between cui3 and cui4 was not within an acceptable level (higher than 3.84), indicating the existence of a relationship between these two items. By freeing these corresponding parameters with the largest MI value, the χ^2 will drop and the model will be significantly improved for gaining a more parsimonious model. By doing this, it has been found that the χ^2 value was statistically insignificant and all indices were acceptable, representing an acceptable goodness-of-fit of model (χ^2 = .018, df =1, χ^2 /df =.018, P = .894, GFI = 1.000, AGFI = 1.000, NFI = 1.000, CFI = 1.000, TLI = 1.009 and RMSEA = .000) (see Appendix D.4 for the original statistical output). No item was removed and four items were used for further analysis (see Table 5.8). As illustrated in Figure 5.4, the measurement model was represented with four items and the standardised factor loadings for these measures were all higher than .5. This indicates that standardised parameter estimates for these measures were statistically significant (P<0.001), providing a unidimensional scale.

Table 5.8 Customisation Items and their Description

Original Item	Item Label	Deleted Item
1. Finds out actively what our customers need and want	Cus1	
2. Asks our customers what banks can do differently to improve our products/services	Cus2	
3. Customizes paperworks and processes to save individual customer's time and the bank's expense	Cus3	
4. Uses customer knowledge to customize products and services	Cus4	

Note: No item has been deleted

Figure 5.4 Measurement Model of Customisation



χ^2 = .018, χ^2 /df =.018, GFI = 1.000, AGFI = 1.000, NFI = 1.000, CFI = 1.000, TLI = 1.009 and RMSEA = .000

5.5.1.5 Customer Value

The measurement model of customer value was analysed by using three factors (i.e., quality, price and reputation). In total, 7-items represented these three factors of customer value subject to CFA. Quality was measured by using four items (Qua1 to Qua4); price was measured using by two items (Pri5 and Pri6), and reputation was measured using one item (Rep7).

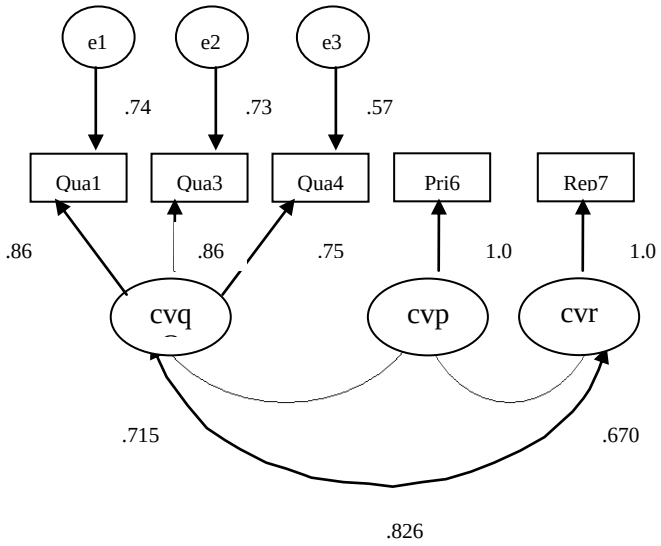
CFA results showed that the initial measurement model needed to be modified (χ^2 = 74.826, df =12, χ^2 /df = 6.236, P = .000, GFI = .911, AGFI = .792, NFI = .937, CFI =.947, TLI = .907 and RMSEA = .153). Two values of correlations between these three factors were greater than .85, demonstrating a lack of discriminant validity. Furthermore, given the fact that some of above indices (AGFI and RMSEA) were not acceptable, further model modification was conducted to make it fit. This assessment involved modification indices and the deletion of highly correlated items. By doing this, it has been found that all the values were within the acceptable level (χ^2 = 2.767, df =3, χ^2 /df =.9228, P = .429, GFI = .995, AGFI = .976, NFI = .996, CFI = 1.000, TLI = 1.000 and RMSEA = .000) (see Appendix D.5 for the original statistical output), representing an acceptable goodness-of-fit of model. This procedure resulted in totally removing Qua2 and Pri5 for further analysis.

Given that the modified model fits the data adequately and the values of correlations between the underlying factors are less than .85 (.715, .670 and .826 individually), no further adjustments were required. As shown in Figure 5.5, the final modified model was represented with three items measuring quality, one item measuring price and one item measuring reputation (see Table 5.9). The standardised factor loadings for these measures were all greater than .5, providing unidimensional scales for each of these three factors.

Table 5.9 Customer Value Items and their Description

Original Item	Item Label	Deleted Item
1. Your bank delivers services of the highest quality	Qua1	
2. The quality of your bank's service is consistently high	Qua2	Deleted
3. Your bank's service is very reliable	Qua3	
4. Your bank's staff treat customers with great respect	Qua4	
5. The price of your bank's service is considered reasonable	Pri5	Deleted
6. Your bank's service fits customers' needs	Pri6	
7. Your bank's service is considered prestigious	Rep7	

Figure 5.5 Measurement Model of Customer Value



χ^2 = 2.767, χ^2 /df =.9228, GFI = .995, AGFI = .976, NFI = .996, CFI = 1.000, TLI = 1.000 and RMSEA = .000

5.5.1.6 Customer Satisfaction

The construct of customer satisfaction was measured by using 6 items (Sat1 to Sat6). The results of CFA showed that the initial measurement model needed to be modified (χ^2 = 74.826, df =12, χ^2 /df = 6.236, P = .000, GFI = .911, AGFI = .792, NFI = .937, CFI =.947, TLI = .907 and RMSEA = .153). Given the fact that some of above indices were not acceptable, further model modification was conducted to make a better fit. This assessment involved the inspection of modification indices between sat1 and sat2,

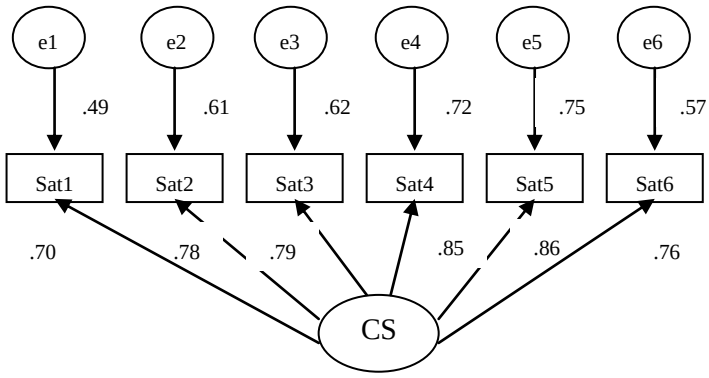
and between sat1 and sat6. By doing this, it has been found that all the values were within the acceptable level (χ^2 = 7.178, df =7, χ^2 /df =1.025, P = .411, GFI = .990, AGFI = .969, NFI = .992, CFI = 1.000, TLI = 1.000 and RMSEA = .011) (see Appendix D.6 for the original statistical output). The chi-square was statistically insignificant (P>.05) and all indices were within an acceptable level, representing an acceptable goodness-of-fit of model. No item was removed and thus six items were used for further analysis (see Table 5.10). As depicted in Figure 5.6, the measurement model was represented with six items. The standardised factor loadings for these measures were all higher than .5 and standardised parameter estimates for these measures were statistically significant (P<0.001), providing a unidimensional scale.

Table 5.10 Customer Satisfaction Items and their Description

Original Item	Item Label	Deleted Item
1. Innovative products and services	Sat1	
2. Convenience to the customer	Sat2	
3. The employees' team spirit	Sat3	
4. On-time delivery of customer service	Sat4	
5. Anticipation of emerging customers' needs	Sat5	
6. The rate of the customer's complaints handled (e.g., processing time, efficiency and attitude)	Sat6	

Note: No item has been deleted

Figure 5.6 Measurement Model of Customer Satisfaction



χ^2 = 7.178, χ^2 /df =1.025, GFI = .990, AGFI = .969, NFI = .992, CFI = 1.000, TLI = 1.000 and RMSEA = .011

5.5.1.7 Customer Loyalty

The measurement model of customer loyalty was represented by using two factors, behavioural and attitudinal loyalty. As outlined in Table 5.11, behavioural loyalty was measured using six indicators (Beh1 to Beh6), while the attitudinal factor was measured by using one indicator (Att7).

CFA results demonstrated that the initial measurement model needed to be modified (χ^2 = 62.597, df =14, χ^2 /df =4.471, P = .000, GFI = .926, AGFI = .852, NFI = .904, CFI = .923, TLI = .885 and RMSEA = .122). This assessment involved the adjustment of modification indices between beh1 and beh2 (the value of MI=9.91), and between beh2 and beh3 (the value of MI=26.20). By doing this, it has been found that all the values were within the acceptable range (χ^2 = 23.10, df =12, χ^2 /df =1.925, P = .027, GFI = .974, AGFI = .938, NFI = .965, CFI = .983, TLI = .969 and RMSEA = .064) (see Appendix D.7 for the original statistical output). Although the chi-square was still statistically significant (P<.05), the modified measurement model could be judged as providing an acceptable fit as the χ^2 estimate rejecting valid models in large sample size is commonly accepted (Bagozzi and Yi, 1988). Also, to exclude this interference, this thesis employs the ratio of χ^2 to df to be the indicator of goodness-of-fit of the model. The value of χ^2 /df (1.925) is less than 3.0, indicating an acceptable model fit.

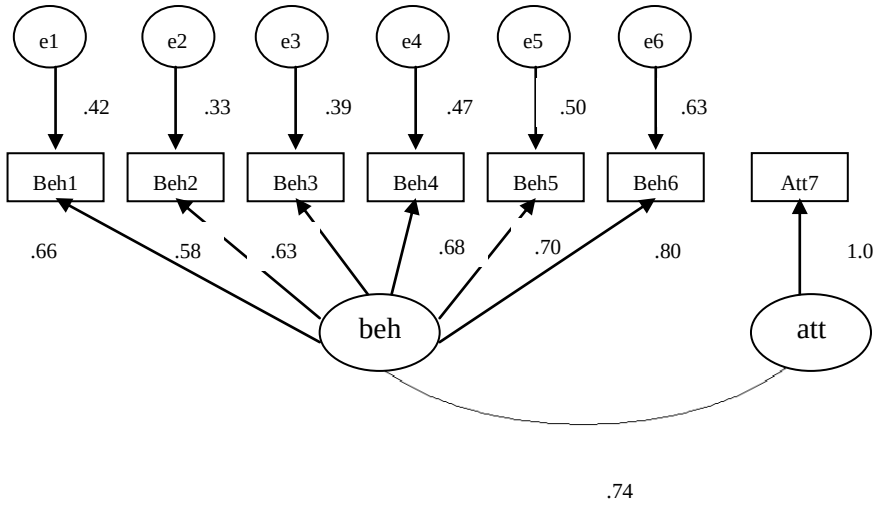
Given that the model fits the data adequately and the value of correlation (.742) between these two factors is less than .85, no further adjustments were required. As depicted in Figure 5.7, the modified model was represented with seven items. The standardised factor loadings for these measures were all higher than .5 and standardised parameter

estimates for these items were statistically significant (P<0.001), providing a unidimensional scale for each of the two factors.

Table 5.11 Customer Loyalty Items and Their Description

Original Item	Item Label	Deleted Item
1. Customers frequently visit your bank	Beh1	
2. The diversity of products customers purchase with your bank is great	Beh2	
3. The amount of money customers consume in your bank is high	Beh3	
4. The period of time when customers frequently visit your bank is long	Beh4	
5. The period of time between the last two purchases by customers with your bank is short	Beh5	
6. The old customers recommend your bank to the new customers	Att7	
7. The retention rate for the old customers is high	Beh6	

Figure 5.7 Measurement Model of Customer Loyalty



χ^2 = 23.10, χ^2 /df =1.925, GFI = .974, AGFI = .938, NFI = .965, CFI = .983, TLI = .969 and RMSEA = .064

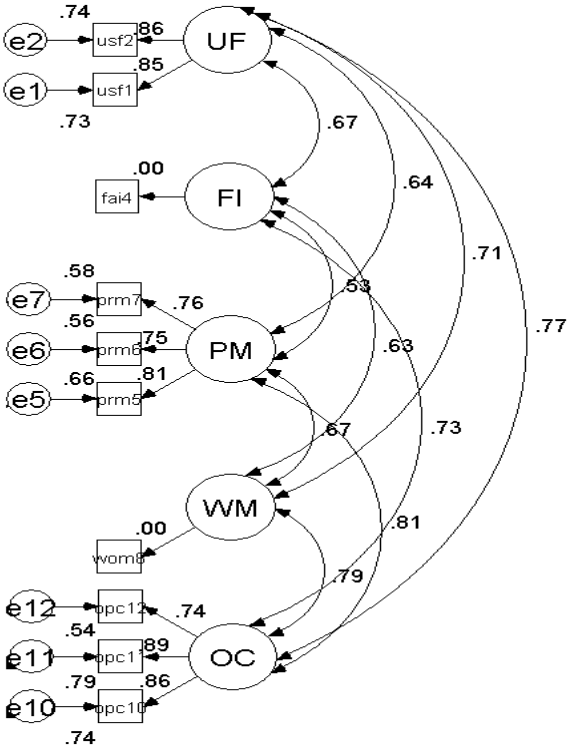
5.5.1.8 Customer Lifetime Value

The measurement model of customer lifetime value was represented by using five factors with a total of 12 items, including usages factor (three items), fan identification (one item), product merchandising (three items), word of mouth (two items), and opportunity cost (three items). CFA results showed that the initial measurement model needed to be modified (χ^2 = 116.325, df =45, χ^2 /df =2.585, P = .000, GFI = .918, AGFI = .859, NFI = .940, CFI = .962, TLI = .944 and RMSEA = .084). Given the fact that some of above indices (P value, AGFI and RMSEA) were not acceptable, a further model modification was conducted to make a better fit and more parsimonious model. This assessment involved the adjustment of modification indices and the deletion of highly correlated items. By doing this, it has been found that all the values were within the acceptable range (χ^2 = 31.491, df =25, χ^2 /df =1.260, P = .173, GFI = .972, AGFI = .938, NFI = .978, CFI = .995, TLI = .992 and RMSEA = .034) (see Appendix D.8 for the original statistical output). The χ^2 value was statistically insignificant (P>.05) and all indices were within acceptable level, representing an acceptable goodness-of-fit of model. This procedure resulted in removing one item (Usf3) from usages factor and one item (Wom9) from word of mouth for further analysis. Given that the model fits the data adequately and the values of correlations between these five factors are less than .85, no further adjustments were required. As depicted in Figure 5.8, the modified model was represented with ten items in five factors. The standardised factor loadings for these items were all higher than .5 and the standardised parameter estimates for these measures were statistically significant (P<0.001), providing a unidimensional scale.

Table 5.12 Customer Lifetime Value Items and their Description

Original Item	Item Label	Deleted Item
1. Customers would not change their loyalty to your bank for several years in their lifetime	Usf1	
2. Customers would keep doing business with your bank	Usf2	
3. Compared with major competitors, your bank is the best one	Usf3	Deleted
4. Customers are proud of being your bank's customers	Fai4	
5. Customers would buy products and services of your bank, through its advertisement	Prm5	
6. Customers would buy the new products and services of your bank due to the bank staffs' promotion	Prm6	
7. I think advertisement has an important affect to the image building of our bank	Prm7	
8. Customers would recommend your bank to their friends	Wom8	
9. Customers are willing to share their experiences of doing business with your bank to others	Wom9	Deleted
10. Compared with major competitors, it is worth to pay to your bank's products and services	Opc10	
11. Customers are satisfied with the entire benefits provided by your bank	Opc11	
12. The service provided by your bank is equal to the expense customers had paid	Opc12	

Figure 5.8 Measurement Model of Customer Lifetime Value



χ^2 = 31.491, χ^2 /df =1.260, GFI = .972, AGFI = .938, NFI = .978, CFI = .995, TLI = .992 and RMSEA = .034

5.5.2 Reliability and Validity of the Constructs

Following the identification of the unidimensionality, the reliability and the validity of the constructs were measured prior to testing the structural model. The reliability was assessed by using three types of reliability: Cronbach's alpha, reliability for the composite of measures of a latent variable (composite reliability, CR) and average variance extracted (AVE) from a set of measures of a latent variable. The validity was assessed by using content validity, convergent validity, discriminant validity, criterion validity and external validity. CR and AVE were calculated from the measurement model estimates by using the CR formula[3] and AVE formula[4]. According to Bagozzi and Yi (1988), CR equal or greater than .60 and AVE equal or greater than .50 are within the acceptable level. Table 5.13 summarised the reliability of measures for the model. The value of Cronbach's alpha for all constructs exceeded the suggested level of 0.70 and the values of CR were quite high. Similarly, the measures of AVE suggested satisfactory reliability. Therefore, as showed in Table 5.13, Cronbach's alpha, CR and AVE indicated an acceptable level for the reliability of underlying constructs. This means that items evaluating all constructs have consistency and stability (Bagozzi and

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3 $$\rho_\eta = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \varepsilon_i}$$

Where λ_i is the standardised loading for each observed variables, ε_i is the error variance associated with each observed variables, and ρ_η is the measure of construct reliability.

4 $$\rho_{vc(\eta)} = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \varepsilon_i}$$

Where λ_i is the standardised loading for each observed variables, and ε_i is the error variance associated with each observed variables, and $\rho_{vc(\eta)}$ is the measure of average variance extracted.

Yi, 1988), supporting the reliability of the constructs.

As for validity, the validities for content, convergent, discriminant and criterion validity have been assessed by CFA. First, the fit of the model using goodness-of-fit indices has confirmed the existence of content validity. Additionally, the constructs in the research model were mainly developed based on the theoretical basis, the adaption of an instrument that had been used previously, and the discussion with academics and practitioners. This helped to enhance the content validity of measurement for this thesis. Therefore, the content validity of each measurement scale is broadly supported by the research literature from which it is derived. Second, convergent validity was supported as all factor loadings for items were greater than 0.50 and statistically significant ($P<0.001$). Also, convergent validity was supported by AVE of each factor being more than .50. Finally, discriminant validity was achieved because the AVE for each construct is higher than .5 and relatively higher than the square of correlations between it and any other constructs in the model (see Table 5.14). This demonstrated that the constructs are both conceptually and empirically distinct from each other. Furthermore, criterion validity is synonymous with convergent validity (Zikmund, 1997). Because convergent validity has been supported, criterion validity was also viewed to be achieved. The evidence on external validity for this thesis also has been obtained because the sample banks are representatives of the banking industry in Taiwan and the proposed model was operationalised by examining it in a real-world setting (Zikmund, 2003). That is, the findings of this research are linked to the real-life environment in which they occurred. Therefore, the results indicated that the validity of this thesis was well accepted.

Table 5.13 CFA Results and Relevant Reliability of Measures

Construct/items	Standardised Loading	Individual Item Reliability	Cronbach α	CR	AVE
Customer knowledge			.80	.93	.64
Kac3	.81	.66			
Kac4	.85	.72			
Kac5	.84	.71			
Kfc6	.82	.67			
Kfc7	.58	.34			
Kbc8	.62	.38			
Kbc9	.93	.86			
Kbc10	.87	.76			
CKM capability			.92	.94	.55
Kic2	.70	.49			
Kic3	.67	.45			
Kic6	.75	.56			
Kic7	.63	.40			
Kic8	.70	.49			
Kic9	.72	.52			
Kic10	.74	.55			
Kic11	.66	.44			
Kpc14	.84	.71			
Kpc15	.89	.79			
Kpc16	.84	.71			
Kpc17	.75	.56			
Customer interaction			.87	.87	.54
Cui1	.82	.67			
Cui2	.72	.52			
Cui3	.82	.67			
Cui4	.69	.48			
Cui5	.63	.40			
Cui7	.70	.49			
Customisation			.91	.91	.72
Cus1	.87	.76			
Cus2	.87	.76			
Cus3	.85	.72			
Cus4	.80	.64			
Customer value			.90	.95	.81
Qua1	.86	.74			
Qua3	.86	.74			
Qua4	.75	.56			
Pri6	1.0	1.0			
Rep7	1.0	1.0			

Table 5.13 (Continued)

Customer satisfaction				.91	.91	.63
	Sat1	.70	.49			
	Sat2	.78	.61			
	Sat3	.79	.62			
	Sat4	.85	.72			
	Sat5	.86	.74			
	Sat6	.76	.58			
Customer loyalty				.87	.89	.54
	Beh1	.66	.44			
	Beh2	.58	.34			
	Beh3	.63	.40			
	Beh4	.68	.46			
	Beh5	.70	.49			
	Beh6	.80	.64			
	Att7	1.0	1.0			
CLV				.92	.96	.73
	Usf1	.85	.72			
	Usf2	.86	.74			
	Fai4	1.0	1.0			
	Prm5	.81	.66			
	Prm6	.75	.56			
	Prm7	.76	.58			
	Wom8	1.0	1.0			
	Opc10	.86	.74			
	Opc11	.89	.79			
	Opc12	.74	.55			

Note: CR = Composite Reliability; AVE= Average Variance Extraction

Table 5.14 AVE and the Square of Correlation for Discriminant Validity

	CK	CKMC	CI	CU	CV	CS	CL	CLV
Customer knowledge	.64 [a]							
CKM capability	.24	.55 [a]						
Customer interaction	.19	.46	.54 [a]					
Customisation	.17	.52	.44	.72 [a]				
Customer value	.09	.32	.43	.38	.81 [a]			
Customer satisfaction	.16	.44	.41	.50	.56	.63 [a]		
Customer loyalty	.20	.32	.25	.31	.24	.40	.54 [a]	
Customer lifetime value	.22	.41	.33	.45	.40	.57	.51	.73 [a]

Note: [a] indicates average variance extraction; numbers below the diagonal represent the square of construct correlations

5.5.3 Review of Measurement Model

As examined in the preceding sections, each construct has been measured by the observed variables in the individual measurement model, specifying the relationships between the factors and their items. The unidimensionality, the reliability and the validity were respectively assessed by using CFA. Results indicated that the measurement model needed to be modified in order to make it more parsimonious. The model modification was based on the following conditions, including: 1) model not adequate to fit the data, 2) large number standardised residuals and modification indices, 3) the factors being highly correlated (i.e., >.85) showing a lack of discriminant validity, and 4) items not highly loaded on their respective hypothesized factor, i.e. standardised parameter estimates < .50. This respecification should fit the requirement of SEM principle and theoretical basis. The modified measurement model has reached an acceptable level to proceed with the evaluation of reliability and validity of each construct in the modified model. As listed in Table 5.13, the reliability of measures was assessed by using individual item reliability, Cronbach α, CR and AVE, indicating an acceptable range for the reliability of constructs. As for validity, convergent validity was supported because all factor loadings for items were greater than 0.50 and statistically significant. It was additionally supported by AVE being more than .50. Discriminant validity was achieved as each factor in each measurement model is empirically distinguishable (i.e., the values of correlations between factors<.85) and the AVE for each construct is higher than .5 and relatively higher than the square of correlations between two constructs. Furthermore, the goodness-of-fit indices have confirmed the existence of content validity. Criterion validity and external validity were also supported. As the measurement model has a satisfactory level of the reliability and

the validity, the structural model would be conducted in the next section.

5.6 Structural Model Analysis

Following the validation and acceptable level of all constructs in the measurement model, the structural model was conducted to examine the hypotheses and to specify the relationships among latent constructs in the research model. Hence, the structural model in this thesis is to test the underlying hypotheses in order to answer the research questions outlined in Chapter One. As showed in Table 5.15, the twelve causal paths were depicted (H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b, H5, H6, H7 and H8), demonstrating the relationships between these constructs. These constructs were classified into two sections, including exogenous constructs (i.e., customer knowledge, CKM capability, customer interaction and customization) and endogenous constructs (i.e., customer value, customer satisfaction, customer loyalty and CLV).

Assessing the structural model, a wide range of goodness-of-fit indices was examined to indicate if the structural model achieves an acceptable level and fits the observed data. If the indices were not acceptable, further model respecification was conducted in order to reach the model fit. As illustrated in the path diagram (see Figures 5.9), the values for the paths linking latent constructs with a single-headed arrow represent standardised regression weights (ß). In the following section, the structural model is discussed in more detailed.

Table 5.15 Research Hypotheses

Hypotheses Path.	Research Hypotheses
H1a: CK → CV	Customer knowledge has a direct and positive effect on customer value
H1b: CK → CS	Customer knowledge has a direct and positive effect on customer satisfaction
H2a: CKMC → CV	CKM capability has a direct and positive effect on customer value
H2b: CKMC → CS	CKM capability has a direct and positive effect on customer satisfaction
H3a: CI → CV	Customer interaction has a direct and positive effect on customer value
H3b: CI → CS	Customer interaction has a direct and positive effect on customer satisfaction
H4a: Customisation → CV	Customization has a direct and positive effect on customer value
H4b: Customisation → CS	Customization has a direct and positive effect on customer satisfaction
H5: CV → CS	Customer value has a direct and positive effect on customer satisfaction
H6: CV → CL	Customer value has a direct and positive effect on customer loyalty
H7: CS → CL	Customer satisfaction has a direct and positive effect on customer loyalty
H8: CL → CLV	Customer loyalty has a direct and positive effect on customer lifetime value

5.6.1 Structural Model One (Testing Original Hypothesised Relationships)

The structural model was conducted to explore the twelve causal relationships listed in Table 5.15. As depicted in Figure 5.9, exogenous constructs, including customer knowledge (ξ_1), CKM capability (ξ_2), customer interaction (ξ_3) and customisation (ξ_4), have double-headed arrow linking each other in order to meet the assumption of SEM that exogenous constructs are correlated, even though no correlations really exist. Endogenous constructs, including customer value (η_1), satisfaction (η_2), loyalty (η_3) and CLV (η_4), have at least one single-headed arrow leading to them, indicating the hypothesised causal relationships between these endogenous constructs. Customer value and customer satisfaction are posited as the consequences of CRM's constructs (customer knowledge, CKM capability, customer interaction, and customization) and as the antecedents of loyalty, which in turn leads to CLV. The measurement error represents error in measurement that the variance of observed variable is unexplained by latent variable. The residual errors result from random error and/or systematic

influences, which have not been explicitly modelled in the structural model.

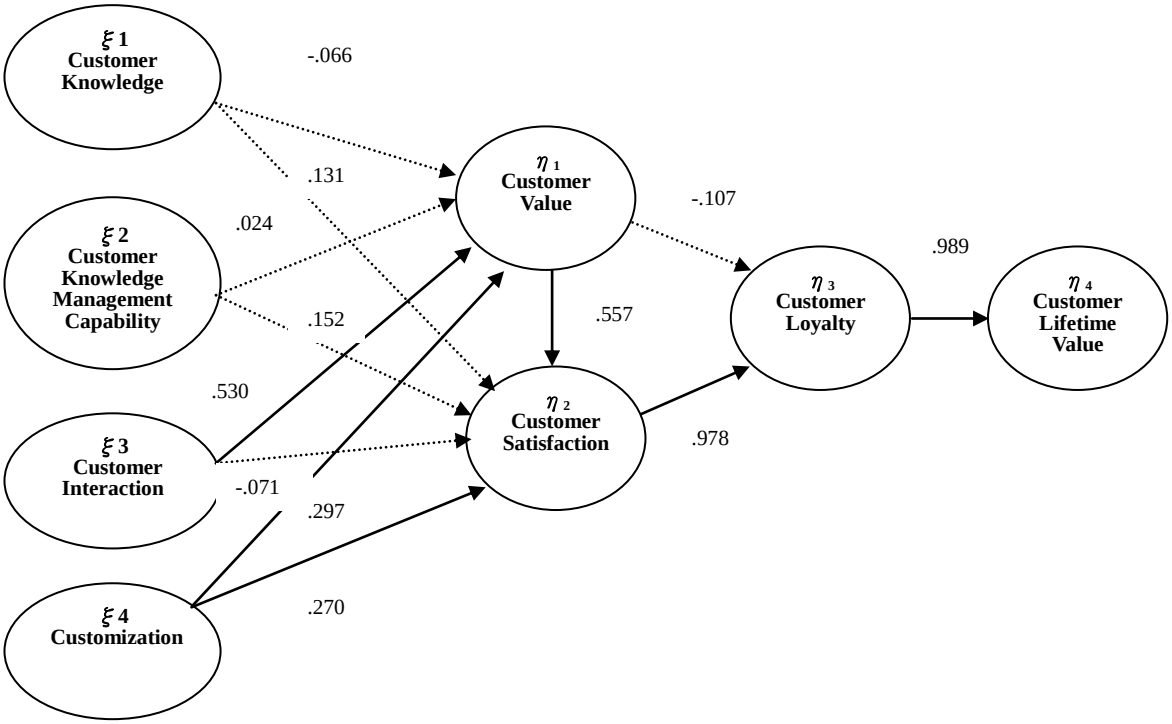
As summarised in Table 5.16, the results showed that the hypotheses H3a, H4a, H4b, H5, H7 and H8 were supported. The value of standardised path coefficient for these hypotheses were statistically significant (path coefficient = .530, .297, .270, .557, .978 and .989, respectively), representing support for these hypotheses. The hypotheses H1a, H1b, H2a, H2b, H3b and H6 were rejected because they were statistically insignificant (path coefficient = -.066, .131, .024, .152, -.071 and -.109, respectively). Though H1b and H2b were rejected, they hold a positive path coefficient, meaning customer knowledge and CKM capability have a positive impact on customer value, but not statistically significant. The indices for goodness-of-fit showed that this model fits the data adequately, even though chi-square was significant (χ^2 = 687.605, df =410, χ^2 /df =1.677, P = .000, GFI = .836, AGFI = .801, NFI = .871, CFI = .943, TLI = .935 and RSMEA = .055) (see Appendix D.9 for original statistical output). Although the χ^2 value was still statistically significant (P<.05), the structural model could be judged as providing an acceptable fit as χ^2 value rejecting valid models in large sample size is commonly accepted (Bagozzi and Yi, 1988). To exclude this interference, this thesis employs the ratio of χ^2 to df to be the indicator of goodness-of-fit of the model. The value of χ^2/df (1.677) is less than 3.0, indicating an acceptable model fit. The model, however, demonstrates that six of twelve paths were not statistically significant. Figure 5.9 showed the result of each hypothesized path. Accordingly, removing insignificant paths was used to respecify the model for possibly providing a better fit to the data and achieve a more parsimonious model.

Table 5.16 Results of Original SEM Analysis and Research Hypotheses

Hypothesis	Path	Path coefficient	t-value	Assessment
H1a	CK → CV	-.066	-.508	Rejected
H1b	CK → CS	.131	1.376	Rejected
H2a	CKMC → CV	.024	.126	Rejected
H2b	CKMC → CS	.152	1.088	Rejected
H3a	CI → CV	.530	4.534***	Supported
H3b	CI → CS	-.071	-.757	Rejected
H4a	Customisation → CV	.297	2.405*	Supported
H4b	Customisation → CS	.270	2.865**	Supported
H5	CV → CS	.557	6.803***	Supported
H6	CV → CL	-.107	-.953	Rejected
H7	CS → CL	.978	6.639***	Supported
H8	CL → CLV	.989	11.073***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.9 Original SEM Specification and Relevant Hypotheses



Note: Dotted lines indicate the insignificant paths between constructs

5.6.2 Structural Model Two (H2a Removed)

Following the preceding discussion, the results of testing the original structural model demonstrated that six paths needed to be removed. As Holmes-Smith et al. (2006)

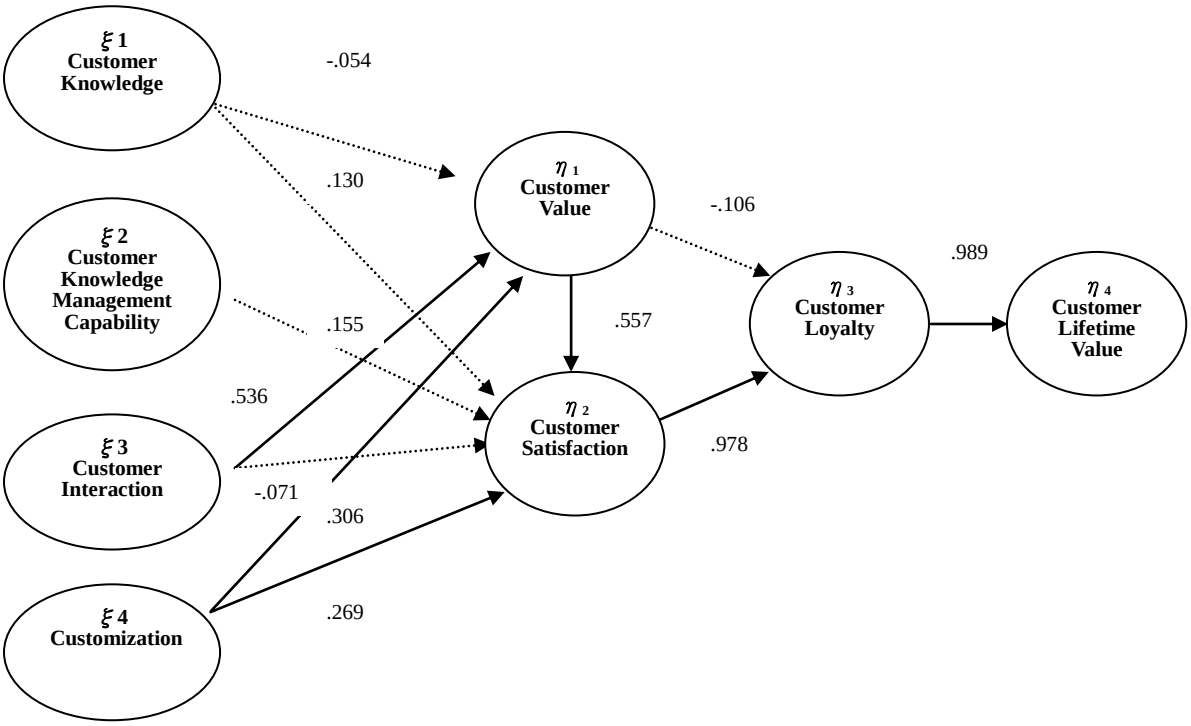
suggested, the deleting procedure was conducted by removing one insignificant path at a time as it could change the modification indices and structural coefficients and their significance. Therefore, the insignificant path (H2a) connecting CKM capability and customer value was first deleted, as it has the lowest standardised estimate value (.024). The path (H2a) was removed (see Figure 5.10). As shown in Table 5.17, the results indicate that the hypotheses H3a, H4a, H4b, H5, H7 and H8 were accepted, because they were statistically significant, while the hypotheses H1a, H1b, H2b, H3b and H6 were rejected. These results also showed that these paths (H1a, H1b, H2b, H3b and H6) were to be deleted next. The goodness-of-fit indices show that this modified model fits the data adequately, even though the chi-square was significant (χ^2 = 687.621, df =411, χ^2 /df =1.673, P = .000, GFI = .836, AGFI = .802, NFI = .871, CFI = .943, TLI = .936, and RSMEA = .055) (see Appendix D.10 for the original statistical output). These results showed that modified structural model is a better fit of the data than the original structural model. The model, however, demonstrates that five of eleven paths were not statistically significant, and that the path linking customer knowledge with customer value (H1a) was the second path to be removed. Figure 5.10 showed the result of each hypothesized path.

Table 5.17 Results of SEM Analysis and Research Hypotheses (H2a Removed)

Hypothesis	Path	Path coefficient	t-value	Assessment
H1a	CK → CV	-.054	-.597	Rejected
H1b	CK → CS	.130	1.373	Rejected
H2b	CKMC → CS	.155	1.117	Rejected
H3a	CI → CV	.536	4.934***	Supported
H3b	CI → CS	-.071	-.760	Rejected
H4a	Customisation → CV	.306	2.098*	Supported
H4b	Customisation → CS	.269	2.857**	Supported
H5	CV → CS	.557	6.801***	Supported
H6	CV → CL	-.109	-.953	Rejected
H7	CS → CL	.978	6.640***	Supported
H8	CL → CLV	.989	11.073***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.10 SEM Specification and Relevant Hypotheses (H2a Removed)



Note: Dotted lines indicate the insignificant paths between constructs

5.6.3 Structural Model Three (H1a Removed)

Based on the results obtained from structural model two, the insignificant path linking customer knowledge and customer value was (H1a) deleted. As shown in Table 5.18, the results indicate that the hypotheses H3a, H4a, H4b, H5, H7 and H8 were accepted and the standarised estimates for these hypotheses were .513, .292, .271, .550, .974, and .989, respectively. The hypotheses H1b, H2b, H3b, and H6 were rejected because they were insignificant. Therefore, the paths (H1b, H2b, H3b and H6) were to be deleted next. The goodness-of-fit indices show that this modified model fits the data adequately, even though theχ^2 value was significant (χ^2 = 687.977, df =412, χ^2 /df =1.670, P = .000, GFI = .836, AGFI = .802, NFI = .871, CFI = .943, TLI = .936 and

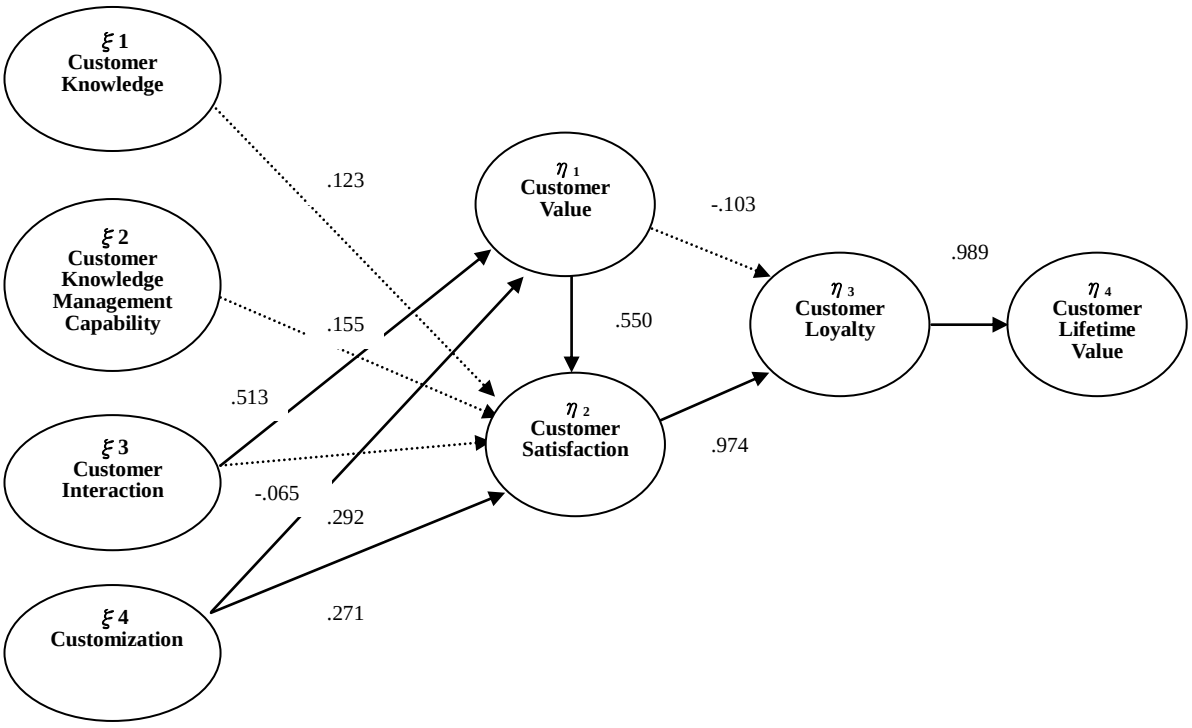
RSMEA = .055) (see Appendix D.11 for the original statistical output). These results show that modified structural model three is a better fit of the data. Though H1b and H2b were not statistically significant, their path coefficient were positive (ß =.123 and ß =.155), indicating that customer knowledge and CKM capability have potentially a positive influence on customer satisfaction. The path linking customer interaction with customer satisfaction (H3b) was the third path to be removed. Figure 5.11 showed the result of each hypothesized path.

Table 5.18 Results of SEM Analysis and Research Hypotheses (H1a Removed)

Hypothesis	Path	Path coefficient	t-value	Assessment
H1b	CK → CS	.123	1.301	Rejected
H2b	CKMC → CS	.155	1.120	Rejected
H3a	CI → CV	.513	5.083***	Supported
H3b	CI → CS	-.065	-.705	Rejected
H4a	Customisation → CV	.292	3.049**	Supported
H4b	Customisation → CS	.271	2.893**	Supported
H5	CV → CS	.550	6.864***	Supported
H6	CV → CL	-.103	-.909	Rejected
H7	CS → CL	.974	6.638***	Supported
H8	CL → CLV	.989	11.071***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.11 SEM Specification and Relevant Hypotheses (H1a Removed)



Note: Dotted lines indicate the insignificant paths between constructs

5.6.4 Structural Model Four (H3b Removed)

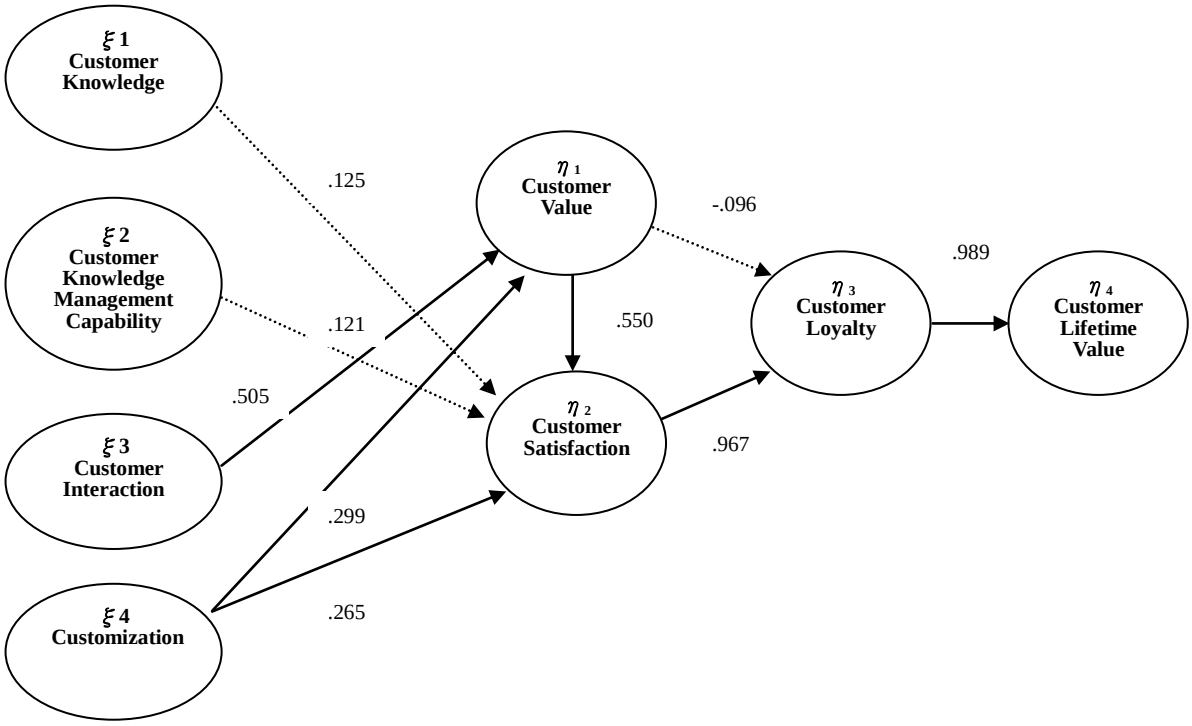
Based on the results obtained from structural model three, the insignificant path linking customer interaction and customer satisfaction (H3b) was deleted. As shown in Table 5.19, the results indicated that the hypotheses H3a, H4a, H4b, H5, H7 and H8 were accepted, while the hypothesis H1b, H2b, and H6 were rejected because they were not statistically significant, representing that the paths (H1b, H2b and H6) were to be deleted next. The goodness-of-fit indices showed that this modified model fits the data adequately (χ^2 = 688.478, df =413, χ^2 /df =1.667, P = .000, GFI = .836, AGFI = .802, NFI = .871, CFI = .943, TLI = .936 and RSMEA = .054) (see Appendix D.12 for the original statistical output). These results show that modified structural model four is a better fit of the data. The path linking customer value with customer loyalty (H6) was the fourth path to be removed. Figure 5.12 showed the result of each hypothesized path.

Table 5.19 Results of SEM Analysis and Research Hypotheses (H3b Removed)

Hypothesis	Path	Path coefficient	t-value	Assessment
H1b	CK → CS	.125	1.316	Rejected
H2b	CKMC → CS	.121	.927	Rejected
H3a	CI → CV	.505	5.045***	Supported
H4a	Customisation → CV	.299	3.149**	Supported
H4b	Customisation → CS	.265	2.846**	Supported
H5	CV → CS	.550	7.460***	Supported
H6	CV → CL	-.096	-.860	Rejected
H7	CS → CL	.967	6.672***	Supported
H8	CL → CLV	.989	11.068***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.12 SEM Specification and Relevant Hypotheses (H3b Removed)



Note: Dotted lines indicate the insignificant paths between constructs

5.6.5 Structural Model Five (H6 Removed)

Based on the results obtained from structural model four, the insignificant path linking customer value and customer loyalty (H6) was removed. As shown in Table 5.20, the results indicated that the hypotheses H3a, H4a, H4b, H5, H7 and H8 were accepted, while the hypotheses H1b and H2b were still rejected. The paths H1b and H2b were to be deleted next. The goodness-of-fit indices showed that this modified model fits the data adequately, even though the χ^2 value was significant (χ^2 = 689.267, df =414, χ^2 /df =1.665, P = .000, GFI = .835, AGFI = .802, NFI = .871, CFI = .943, TLI = .936 and RSMEA = .054) (see Appendix D.13 for original statistical output). The path linking customer value with customer loyalty (H1b) was the fifth path to be removed. Figure

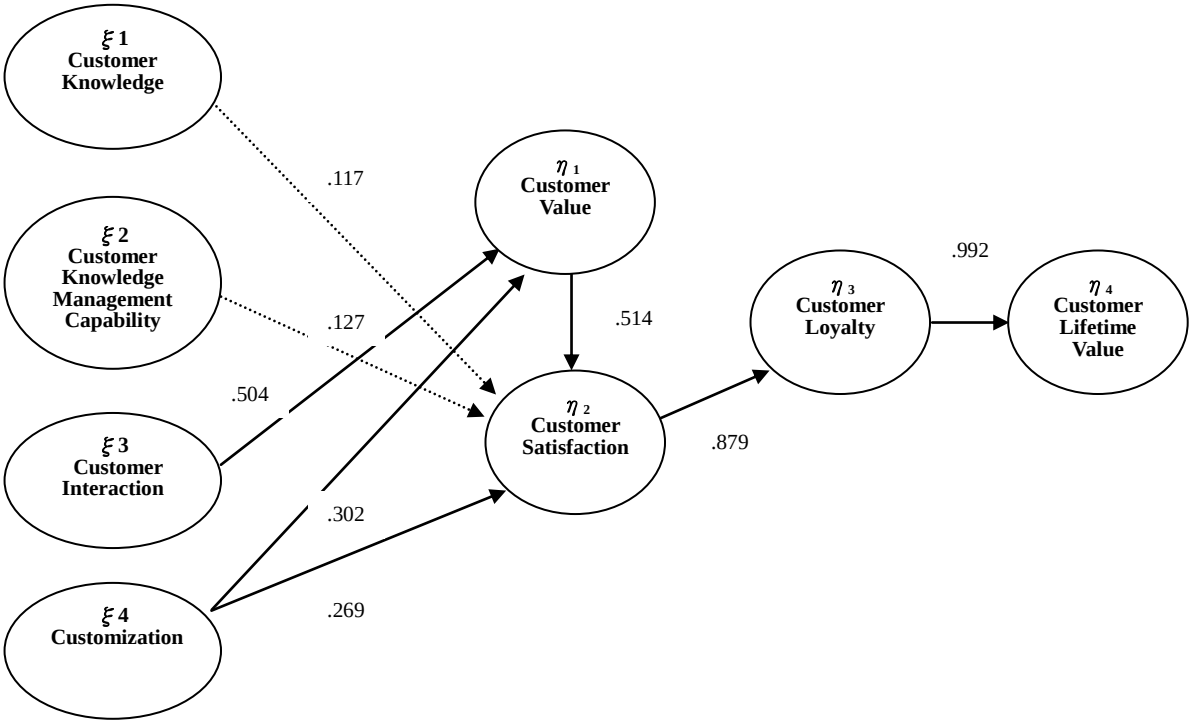
5.13 showed the result of each hypothesized path.

Table 5.20 Results of SEM Analysis and Research Hypotheses (H6 Removed)

Hypothesis	Path	Path coefficient	t-value	Assessment
H1b	CK → CS	.117	1.213	Rejected
H2b	CKMC → CS	.127	.958	Rejected
H3a	CI → CV	.504	5.043***	Supported
H4a	Customisation → CV	.302	3.183**	Supported
H4b	Customisation → CS	.269	2.827**	Supported
H5	CV → CS	.514	7.354***	Supported
H7	CS → CL	.879	9.780***	Supported
H8	CL → CLV	.992	11.067***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.13 SEM Specification and Relevant Hypotheses (H6 Removed)



Note: Dotted lines indicate the insignificant paths between constructs

5.6.6 Structural Model Six (H1b Removed)

Based on the results obtained from structural model five, the insignificant path linking customer knowledge and customer satisfaction (H1b) was removed. As shown in Table

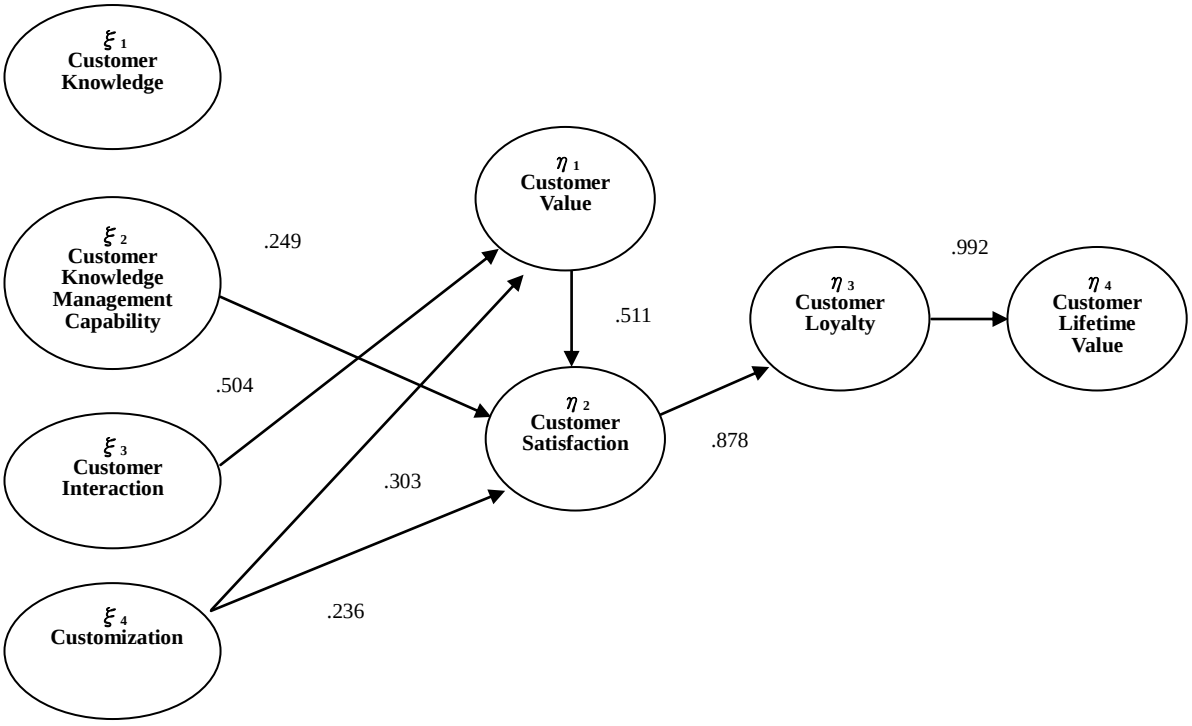
5.21, the results indicated that the hypotheses H2b, H3a, H4a, H4b, H5, H7 and H8 were accepted and the standardised estimates for these hypotheses were .249, .504, .303, .236, .511, .878 and .992, respectively. The goodness-of-fit indices showed that this modified model fits the data adequately (χ^2 = 690.725, df =415, χ^2 /df =1.664, P = .000, GFI = .835, AGFI = .803, NFI = .870, CFI = .943, TLI = .936 and RSMEA = .054) (see Appendix D.14 for the original statistical output). No more paths were to be deleted. Figure 5.14 showed the result of each hypothesized path, indicating that the structural model six is the best fit of the data.

Table 5.21 Results of SEM Analysis and Research Hypotheses (H1b Removed)

Hypothesis	Path	Path coefficient	t-value	Assessment
H2b	CKMC → CS	.249	2.758**	Supported
H3a	CI → CV	.504	5.042***	Supported
H4a	Customisation → CV	.303	3.190**	Supported
H4b	Customisation → CS	.236	2.558*	Supported
H5	CV → CS	.511	7.305***	Supported
H7	CS → CL	.878	9.757***	Supported
H8	CL → CLV	.992	11.049***	Supported

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.14 Final SEM Specification and Relevant Hypotheses (H1b Removed)



In summary, after the five paths (H1a, H1b, H2a, H3b and H6) had been removed, the modified structural model six has been accepted empirically and theoretically as the final parsimonious model. The final results of SEM Analysis are summarised in Table 5.22.

Table 5.22 Final Results of SEM Analysis

Indices of Assessment	Parameter/ Criteria of Assessment		Path Coefficient	t-value
		Lambda X		
	Customer knowledge (ξ_1)	Knowledge about customer (λx11)	.657 [a]	
		Knowledge for customer (λx21)	.591	6.047***
		Knowledge by customer (λx31)	.444	5.040***
	CKM capability (ξ_2)	Knowledge infrastructure capability (λx42)	.875 [a]	
		Knowledge processes capability (λx52)	.826	14.653***
	Customer interaction (ξ_3)	Keeps constant dialogue (λx63)	.756 [a]	
		Uses information technology (λx73)	.703	10.670***
		Call our own firm as customer role (λx83)	.762	11.302***
		Follows interaction paper trail (λx93)	.744	11.131***
		Incoming call as selling opportunities (λx103)	.649	9.639***
		Offers high value-added information (λx113)	.734	11.004***
	Customization (ξ_4)	Find out customer need and want (λx124)	.904 [a]	
		Improve the bank's products and services (λx134)	.873	18.803***
		Customize paperworks and processes (λx144)	.806	15.609***
Preliminary fit criteria		Customer knowledge to customize (λx154)	.757	13.934***
		Lambda Y		
	Customer value (η_1)	Price (λy11)	.911 [a]	
		Quality (λy21)	.774	14.320***
		Reputation (λy31)	.847	17.409***
	Customer satisfaction (η_2)	Innovative (λy42)	.718 [a]	
		Convenience (λy52)	.770	13.757***
		employees' team spirit (λy62)	.794	11.569***
		On-time delivery (λy72)	.840	12.286***
		Anticipation of customers' needs (λy82)	.849	12.433***
		Customer's complaints handled (λy92)	.749	9.852***
	Customer loyalty (η_3)	Behavioural loyalty (λy103)	.757 [a]	
		Attitudinal loyalty (λy113)	.625	11.920***
	CLV (η_4)	Usages factor (λy124)	.770 [a]	
		Fan identification (λy134)	.764	12.154***
		Product merchandising (λy144)	.696	10.821***
		Word of mouth (λy154)	.830	13.417***
		Opportunity cost (λy164)	.895	14.519***
		Gamma (γ)		
	Customer Knowledge →	Customer Value (γ11)	Path	deleted
	Customer Knowledge →	Customer Satisfaction (γ21)	Path	deleted
	CKM Capability →	Customer Value (γ12)	Path	deleted
	CKM Capability →	Customer Satisfaction (γ22)	.249	2.758**
	Customer Interaction →	Customer Value (γ13)	.504	5.042***
Fit of internal structural of a model	Customer Interaction →	Customer Satisfaction (γ23)	Path	deleted
	Customisation →	Customer Value (γ14)	.303	3.190**
	Customisation →	Customer Satisfaction (γ24)	.236	2.558*
		Beta (β)		
	Customer Value →	Customer Satisfaction (β21)	.511	7.305***
	Customer Value →	Customer Loyalty (β31)	Path	deleted
	Customer Satisfaction →	Customer Loyalty (β32)	.878	9.757***
	Customer Loyalty →	Customer Lifetime Value (β43)	.992	11.049***
	χ^2 value/P value		690.72/.000	P < 0.05
	χ^2/df		1.664	< 3
	GFI		.835	< 0.90
Overall model fit	CFI		.943	> 0.90
	NFI		.870	< 0.90
	AGFI		.803	< 0.90
	TLI		.936	> 0.90
	RMSEA		.054	< 0.08

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001, [a]: means fixed parameter=1 and no t-value

5.6.7 Testing of Hypotheses from a Dyadic Perspective

Based on the final parsimonious model obtained from section 5.7.6, this section conducted the testing of hypothesised model from a dyadic perspective (the bank's perspective and the customer's perspective). The sample data was only collected from Yuanta Bank and E. Sun Bank. The term "dyad" used in this thesis represents a matched set comprising each senior manager and several relational customers with the aim of investigating whether the influences of CRM on customer value, satisfaction, loyalty, and CLV as seen by senior managers coincide with those perceived by customers. In total, 123 senior managers and 584 customers were included in the sample data. On average, five customers for each senior manager formed an analysis of matched-dyad of firm-customer pairs.

Therefore, two models were to be tested in this thesis. Model 1 comprised four constructs of CRM, the constructs of customer value, customer satisfaction, customer loyalty, and CLV, all of which were measured from the bank's perspectives. Model 2 differed from Model 1 in that the constructs of customer value, satisfaction, loyalty and CLV in model 2 were measured from the customer's perspective, whereas four construct of CRM still remained measured from the bank's perspective. As shown in Table 5.23, the results of model 1 indicated that the hypotheses (H2b, H3a, H4a, H5, H7 and H8) were accepted while the hypothesis H4b was rejected (see Appendix D.15 for original statistical output). In addition, the results of model 2 indicated that the hypotheses (H5, H7 and H8) were accepted, while the hypotheses (H2b, H3a, H4a and H4b) were rejected. The goodness-of-fit indices showed that this model fits the data adequately, even though the χ^2 value was significant (χ^2 = 622.909, χ^2 /df =1.501, P

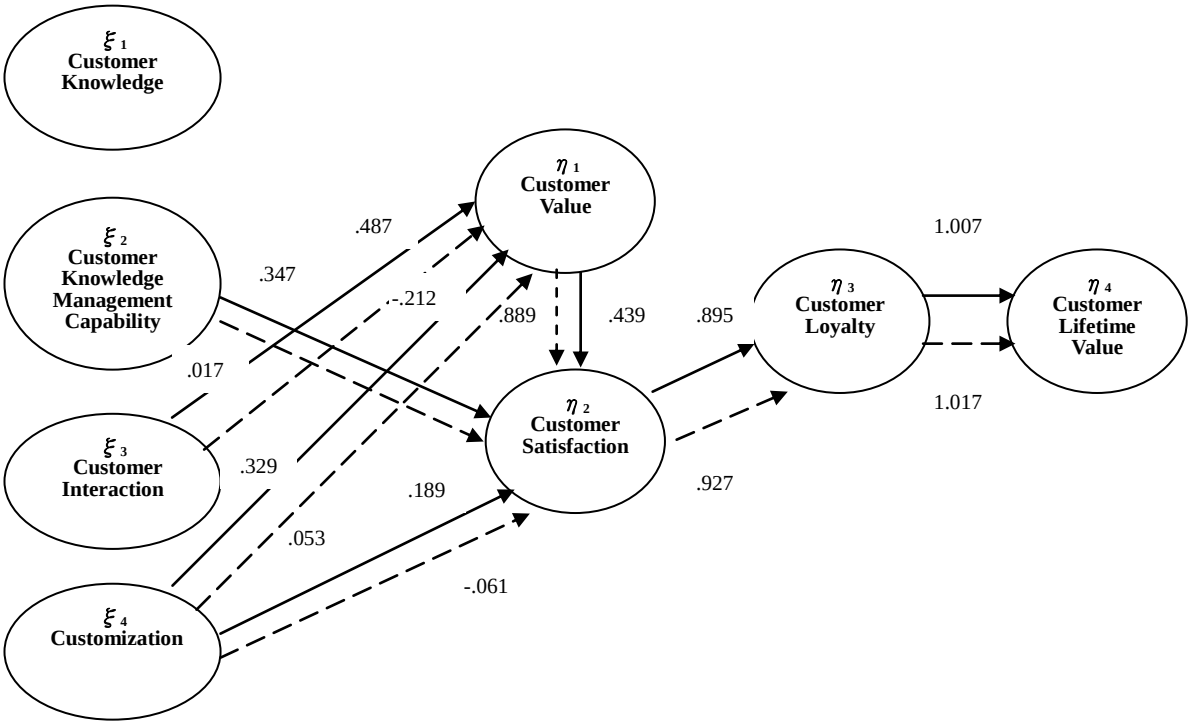
= .000, GFI = .765, AGFI = .719, NFI = .864, CFI = .950, TLI = .944 and RSMEA = .064) (see Appendix D.16 for original statistical output). Figure 5.15 shows the result of each hypothesised path from both the bank's perspective and the customer's perspective.

Table 5.23 Results of SEM Analysis from a Dyadic Perspective

Hypothesis	Path	Path coefficient of Model 1 (t-value)	Path coefficient of Model 2 (t-value)
H2b	CKMC → CS	0.347 (1.96 *)	0.107(0.82)
H3a	CI → CV	0.487 (3.59 ***)	0.212 (1.27)
H4a	Customisation → CV	0.329 (2.58 **)	0.053 (0.39)
H4b	Customisation → CS	0.189 (1.19)	-0.061 (-0.48)
H5	CV → CS	0.439 (4.42 ***)	0.889 (11.81 ***)
H7	CS → CL	0.895 (7.23 ***)	0.927 (10.31 ***)
H8	CL → CLV	1.007 (8.89 ***)	1.017 (15.08 ***)

Notes:* Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001

Figure 5.15 SEM Specification and Relevant Hypotheses from a Dyadic Perspective



Note: Solid lines indicate the hypothesised relationships from the bank's perspective
Dotted lines indicate the hypothesised relationships from the customer's perspective

5.6.8 Review of Structural Model

After the measurement model was validated and achieved an acceptable fit, the structural model was conducted to explore twelve hypotheses relationships between underlying constructs in the model. Based on the results of significant path coefficient, six of the twelve paths (i.e., H1a, H1b, H2a, H2b, H3b and H6) were not statistically significant, indicating that the original structural model needed to be further respecified. Therefore, the processes of model modification were conducted by removing one insignificant path at a time. Five paths (i.e., H2a, H1a, H3b, H6 and H1b) were removed orderly, resulting in a final parsimonious model. As a result, the overall model fit indices demonstrated that the final model is the best fit to the data with seven hypotheses supported (i.e., H2b, H3a, H4a, H4b, H5, H7 and H8) and five hypotheses rejected (i.e., H1a, H1b, H2a, H3b and H6). In the following section, further explanations of the results of testing the hypotheses are discussed.

5.7 Results of Testing Hypotheses from the Bank's Perspective

In total, twelve hypothesized causal relationships were examined. The further details of the results of testing hypotheses from the bank's perspective are discussed below.

5.7.1 Impacts of CRM on Customer Value

As illustrated earlier, four hypotheses (i.e., H1a, H2a, H3a and H4a) explored the relationships between CRM constructs as exogenous variables and customer value as an endogenous variable. As showed in Table 5.22, Two hypotheses (i.e., H3a and H4a)

were tested to be statistically significant and supported (γ = 0.504, t-value=5.042 and γ = 0.303, t-value=3.190, respectively). However, two hypotheses H1a and H2a were statistically insignificant and thus rejected (γ = -.066, t-value=-.508 and γ = 0.024, t-value=.126, respectively) (see Table 5.16).

5.7.2 Impacts of CRM on Customer Satisfaction

Four hypotheses (i.e., H1b, H2b, H3b and H4b) explored the impacts of CRM on customer satisfaction. As outlined in Table 5.22, two hypotheses H2b and H4b were statistically significant and supported (γ = 0.249, t-value=2.758 and γ = 0.236, t-value=2.558, respectively). Nevertheless, the hypotheses H1b and H3b were not significant and thus rejected (γ = 0.131, t-value=1.376 and γ = .071, t-value=-.757, respectively), even though H1b had a positive path coefficient.

5.7.3 Impact of Customer Value on Customer Satisfaction

As hypothesized, the path (H5) representing the relationship between customer value and customer satisfaction was statistically significant and thus supported (ß = 0.511, t-value=7.305). Customer value was found to have a positive impact on customer satisfaction.

5.7.4 Impact of Customer Value on Customer Loyalty

Hypothesis six (H6) demonstrated the relationship between customer value and customer loyalty. Both of these variables were treated as endogenous variables. As

shown in Table 5.22, this hypothesis was not statistically significant and thereby rejected (ß = -.107, t-value=-.953). Therefore, customer value was not found to have a significant impact on customer loyalty

5.7.5 Impact of Customer Satisfaction on Customer Loyalty

Hypothesis seven (H7) represented the relationship between the two endogenous variables, customer satisfaction and customer loyalty. As presented in Table 5.22, this hypothesis was statistically significant, and thus accepted (ß = 0.878, t-value=9.757). Customer satisfaction was found to have a significant and positive impact on customer loyalty.

5.7.6 Customer Loyalty and Customer Lifetime Value

As hypothesized, the path H8 representing the relationship between customer loyalty and CLV was statistically significant and thus supported (ß = 0.992, t-value=11.049). Customer loyalty was found to be positively related to CLV.

5.8 Results of Testing Hypotheses from a Dyadic Perspective

As showed in Table 5.23, the results of Model 1 (the bank's perspective) demonstrated that CKM capability was positively associated with customer satisfaction (γ =0.347, t-value=1.96), providing support for H2b. Customer interaction is a significant predictor of customer value (γ =0.487, t-value=3.59), representing support for H3a. The results also indicated that customisation are positively associated with customer value

(γ =0.329, t-value=2.58), providing support for H4a. The relationship between customisation and customer satisfaction (H4b) was statistically insignificant and thus rejected (γ =0.189, t-value=1.21) even though the path coefficient was positive. Furthermore, customer value was significantly and positively associated with customer satisfaction (ß=0.439, t-value=4.42), and hence H5 received support. Customer satisfaction had a significantly positive impact on customer loyalty (ß=0.895, t-value=7.23), indicating support for H7. Finally, customer loyalty is significantly and positively associated with CLV (ß=1.007, t-value=8.89) and hence H8 received support.

In addition, the results of Model 2 (the customer's perspective) demonstrated that none of the constructs of CRM had significant impacts on customer value and satisfaction, individually. The hypotheses H2b, H3a, H4a and H4b were not supported (γ =.107, .212, .053 and -.061 individually). Furthermore, the results also indicated that customer value was positively associated with customer satisfaction (ß=0.889, t-value=11.81), providing support for H5. The relationship between customer satisfaction and customer loyalty was statistically significant (ß=0.927, t-value=10.31), representing support for H7. Finally, customer loyalty was significantly and positively associated with CLV (ß=1.017, t-value=15.08), and hence H8 received support.

5.9 Summary

The editing and the coding of data were the preliminary steps in data analysis. Following this, data screening was conducted to check missing data and normality before SEM analysis. The number of respondents was analysed and demographic characteristics of these respondents were described. Following that, SEM analysis was

performed in two stages, the measurement model and the structural model. In the measurement model, CFA was used to assess the fit of each measurement model to make sure that each one was unidimensional. In the processes of assessment, normalised residual and modification indices were checked to make the model fit the following criteria: 1) the standardised loadings of indicators on a proposed underlying factor are higher than .50, 2) the values of correlations between these factors are less than .85, and 3) the overall goodness-of-fit indices are within acceptable level of the model.

Initial results suggested that the measurement models needed to be respecified and tested again in order to provide a more parsimonious model before conducting the analysis of the structural model. It was decided to delete two items from customer knowledge, eight items from CKM capability, one item from customer interaction, two items from customer value, and two items from CLV. The modified measurement model fitted adequately to the data and all indicators were highly loaded on their factors. Then, the reliability and the validity of each construct were assessed. The results showed that the constructs in this thesis were reliable, valid and adequate for the use of the structural model analysis. The original structural model with twelve hypotheses was tested, representing that six of twelve hypotheses were not statistically significant. Therefore, the modification of the original structural model was conducted to provide a more parsimonious model. After the processes of model modification, five of twelve hypothesised paths were removed, resulting in the final structural model with seven statistically significant paths. The overall fit indices demonstrated that the final structural model is the best fit of the data.

The following Chapter Six will explain the above results in more detail to answer the four research questions proposed in Chapter One. Further, it draws the theoretical and the academic implications, discusses the research limitations, and proposes the directions for further research and the final conclusions.

CHAPTER SIX: DISCUSSIONS AND CONCLUSIONS

6.0 Introduction

The originality of the thesis is threefold: First, it comes from the contribution made to RM literature which is largely qualitative with the lack of operational contents. The measure of customer value as the direct consequence of CRM and the supporting evidence from customer satisfaction in the CRM study give quantitative support to the RM literature by providing more robust information. Specifically, the SEM approach employed in this research has provided comparative strengths in understanding the CRM-performance relationship. Second, the research in Taiwanese banking has also contributed to the marketing literature because it provides up-to-date data into how Taiwanese banks practice CRM with insights into improving their relationship marketing with their customers. Third, instead of only depending on the bank's perspective, the research has evaluated how customers experienced the CRM's performance created by firms to achieve a dyadic perspective in a single study. Contrasting a firm's degree of CRM's impact as evaluated by the internal managers with that as perceived by the external customers reflects the true nature of CRM's benefits and diagnoses the aspects of the bank's CRM practice that need to be performed more effectively.

This chapter aims to interpret the results presented in Chapter Five and answers three research questions proposed in Chapter One. These are: 1) What are the key constructs of CRM and its influences on customer value and customer satisfaction as customer

benefits to support the realisation of customer loyalty and CLV as the firm's ultimate performance in the CRM-performance relationship?; 2) Following from 1, the indicators of CRM performance, such as customer value, customer satisfaction, customer loyalty and CLV, are used as the key measures to monitor the CRM-performance relationship. What are the causal relationships between these outcomes?; 3) Does the CRM-performance relationship as seen by firms coincide with those perceived by customers?

This chapter is organized into eleven sections. Following this section, the results of testing the hypotheses are outlined in section 6.1. The next five sections discuss the related results to answer each of the above research questions as follows: section 6.2 discusses the effect of each construct of CRM on customer value and customer satisfaction; section 6.3 discusses the influence of customer value on customer satisfaction and customer loyalty; section 6.4 discusses the impact of customer satisfaction on customer loyalty; the influence of customer loyalty on CLV is discussed in section 6.5; and section 6.6 discusses the CRM-performance relationship from a dyadic perspective. Furthermore, theoretical and managerial implications are presented in section 6.7 and research limitations are detailed in section 6.8. Section 6.9 describes the directions for further research and final conclusions are summarized in section 6.10.

6.1 Summary of Testing Results

This thesis empirically tested a CRM-performance relationship model that sharpens the understanding of the uses of key constructs of CRM and its influence on CLV by investigating the mediating roles of customer value and customer satisfaction as the

consequences of CRM and as the antecedents to customer loyalty and ultimately CLV. Customer value and customer satisfaction are viewed as customer benefits affected by CRM, while customer loyalty and CLV are the firm's performance influenced by customer benefits. As discussed in Chapter Two, the underlying constructs used to test the proposed theoretical model were conceptualised following an extensive literature review. The reliable and valid measures used to assess these constructs were also developed on the basis of this literature review.

From the bank's perspective, the empirical evidence of this thesis supports seven of twelve hypothesised relationships depicted in the theoretical model. The results presented in Table 5.21 show that the hypotheses H2b, H3a, H4a, H4b, H5, H7 and H8 were accepted and the standardised path coefficients for these hypotheses were all statistically significant (path coefficient = .249, .504, .303, .236, .511, .878 and .992, respectively). Specifically, the findings demonstrate that two constructs of CRM (i.e., customer interaction and customization) have a significantly positive influence on customer value. CKM capability and customization have a statistically significant relationship with customer satisfaction, whereas customer knowledge was found to be positively related with customer satisfaction (path coefficient = .117). Also, it has been found that customer value and customer satisfaction play a significant mediating role and thus give quantitative support to customer loyalty and CLV. This finding is consistent with scholars (Boulding et al., 2005; Donaldson and O'Toole, 2007; Grönroos, 2004; Kotler et al., 2008; Ravald and Gronroos, 1996; Rust et al., 2010; Richards and Jones, 2008; Ulaga and Eggert, 2006), who argued that customer value and satisfaction should be the key constituents and core outcomes of CRM when modelling a customer-to-firm relationship. In addition, the finding also indicates that

customer value significantly and directly impacts customer satisfaction and has an indirect effect on customer loyalty via customer satisfaction, demonstrating that eliciting customer loyalty is necessary for banks not only to satisfy customers, but to create customer value. Finally, customer loyalty has a significantly positive influence on CLV reflecting as an organisational ultimate goal of CRM.

Disappointingly, from the customer's perspective the uses of four key constructs of CRM do not have significantly positive influences on customer value and customer satisfaction. These mean that the managerial perceptions of CRM practice have no relationships with the customer value and customer satisfaction as perceived by customers. As to the causal relationships between the outcomes of performances, i.e. customer value, customer satisfaction, customer loyalty and CLV, the results are mostly in line with those explained from the bank's perspective. That is, customer value has a direct and positive influence on customer satisfaction, which in turn demonstrates a positive relationship with customer loyalty. Customer loyalty is positively related with CLV. The explanations of results are discussed in more details in the following sections.

6.2 The Consequences of CRM from the Bank's Perspective

This section explains the results of testing the hypothesised relationships between CRM (i.e., customer knowledge, CKM capability, customer interaction and customization) and customer value and between CRM and customer satisfaction. These linkages have aimed to answer the first research question.

Q1: What are the key constructs of CRM and its influences on customer value and customer satisfaction as customer benefits to support the realisation of customer loyalty and CLV as the firm's performance in the CRM-performance relationship?

6.2.1 CRM and Customer Value

As hypothesised in Chapter Three, each construct of CRM was assumed to be directly and positively related with customer value. Therefore, four hypotheses (H1a, H2a, H3a and H4a) were proposed, representing CRM's influence on customer value.

As shown in Table 5.21, the mixed results demonstrated that customer interaction and customization were found to have a significantly positive relationship with customer value, but customer knowledge and CKM capability did not, representing supporting evidences for two of the hypotheses (i.e., H3a and H4a). The findings indicated that Taiwanese banks rely more on close customer interaction and customised products and services than on customer knowledge and CKM capability to represent superior value to their customers. The results also showed that customers would perceive less value the banks created by deploying their customer knowledge and CKM capability, meaning that customer interaction and customised offering used by Taiwanese banks are more crucial in creating superior value to customers. Indeed, in Taiwanese society the more banks encourage their staff to consistently contact and interact with their customers, the more customers are likely to perceive superior value from the banks. That is, the greater the empowerment of the customer-facing staff, the more likely it is that they can increase superior customer value by responding timely and appropriately. In addition, the more customer interaction by using multi-channels through which the bank's

services are delivered to customers, the greater the opportunity to create and add value to customers because it fits customers' needs (Cravens and Piercy, 2009; Denning, 2011; Peelen, 2005). In practice, most Taiwanese banks now offer effective interactive channels, e.g. 24 hours Internet banking, customer service centre and auto loan machine (ALM), to create in-time services to customers, thereby saving customers' time, providing more convenience and lower the cost of doing business and significantly contributing to superior customer value (Lin et al., 2009; Su et al., 2006; Yao and Khong, 2011). Because customer services become more available across innovative interaction channels, the value of customers' perceptions of convenience is enhanced and customers perceived sacrifice is decreased (Richards and Jones, 2008). However, in spite of banks making efforts to migrate customers to lower cost channels, the bank branch remains pivotal in the relationship building (Farquhar et al., 2008).

In addition, the finding of this thesis is consistent with the perspective of Zablah et al. (2004) and Eisingerich and Bell (2007), that customer interaction has significant effects on customer relationship in the case of customers with high-involvement, such as with the banking. It is because when customers are in personal interaction with the bank, they are more likely to experience value-added services and information that make them personally attached to the bank and feel they are in a special relationship with the bank (Lin et al., 2009). Added to this, Taiwanese customers continue to frequent high-street branches. Specifically, from the perspective of the relationship (or so-called "Guanxi") in Chinese society, the Chinese culture stresses the significance of interpersonal interaction among critical personnel across organization (Lin and Si, 2010). The essence of this interaction is interpersonal relations which go far beyond the Western concept of networking as it reaches down into every aspect of Chinese society, influencing social,

political and commercial relations (Gilbert and Tsao, 2000). In the Western cultures the analysis of the relationship has come from transaction cost theory, social exchange theory and interaction theory, whereas the Chinese culture is dominated by "Guanxi" (Adler and Kwon, 2002; Buttery and Wang, 1999; Lin and Si, 2010). This means that the "Guanxi" in Chinese society is built on the basis of the personal interaction and is a particular form of relationship which underpins much of the business carried out in the Chinese economy and can not go unnoticed (Gilbert and Tsao, 2000; Lin and Si, 2010). Therefore, in the case of this thesis, the banking is a highly customer-involved service industry and thus close personal interaction is significant to affect customers' perceptions of value and responses to the banks.

Thus, a significant relationship between customer interaction and customer value is implied when different ways of interaction are effectively and properly provided by a bank to their customers. The result of this thesis is also in line with previous studies, such as of Doyle (2001), Kim et al., 2003, Payne and Frow (2004), Xu and Walton (2005) and Su et al. (2006), that customer interaction focusing on the improvement of contents of communication and the offered channels, leads to the creation of positive customer experiences and added value for customer by fulfilling their needs and reduced cost. That is, customer interaction results in a richer content and helps to explain why customers do what they do when firms can ask customers directly and have an idea of the source of problems, preferences and needs (Denning, 2011).

As to customisation, it was found to be positively associated with customer value. As noted earlier, given advances in IT, the banks have greater capability to customise their offerings to meet individual customers' needs that reflect the value the customers want

by providing specific solutions tailored to them. The finding is in accord with Richards and Jones (2008) and Wang et al. (2010), who asserted that customization improves the degree of customer orientation in the planning process of value-building and thus facilitates firms to deliver superior value to customers. Chen and Popovich (2003), Mithas et al. (2005), Roig et al. (2006) and Stringfellow et al. (2004) argued that firms can proactively and consistently provide more customised offerings to drive customer value when firms carry them out with better knowledge of what the customers value. This finding is also supported by empirical evidence in different contexts. Kotha (1995) and Tu et al. (2001) stated that the firms with customisation capability should be able to capture customers' voices and generate greater customer value than competitors. Liang and Wang's (2005) empirical study, in the financial services industry in the B-to-C context, demonstrated that customized service enables customers to get satisfied with the value of services as it follows customers' needs and meets their expectations. Similarly, Lin et al. (2009) argued that Taiwanese banks endeavour to develop and introduce customised financial services and products, e.g. individual finance management and credit cards, to provide superior value to customers.

Contrary to the researcher's expectations, customer knowledge and CKM capability were not found to significantly affect customer value. The empirical results contradict the perspective of research literature. It is possible that Taiwanese banks did not consciously associate customer knowledge and CKM capability with customer value. From a theoretical perspective, they can be used for profiling customers, identifying customers' latent needs, customizing products and services, sustaining continual innovation and improvement and enabling employees to respond to customers' requirements appropriately (Garcia-Murillo and Annabi, 2002; Minna and Aino, 2005;

Salomann et al., 2005; Su et al., 2006; Buttle, 2010; Lin et al., 2010; Richards and Jones, 2008; Sigala, 2005). Therefore, a potential explanation for this might be that Taiwanese banks did not apply them adequately on the development of the related customer services and products for improving superior value for customers. Moreover, another explanation could be that Taiwanese banks try to tie customers through various loyalty schemes, but they perhaps left the greatest source of value under-leveraged: the knowledge residing in customers (Gibbert et al., 2002). Namely, little systematic attention has been paid to knowledge from customers, the firm's most important asset in the value creation process (Gibbert et al., 2002). Therefore, the bank's CRM practice might be mainly focused on gaining knowledge about customers, but not knowledge from customers. This might indicate that the bank's offerings are not likely to fit the real needs of customers. This is in agreement with Hellier et al. (2003), who argued that when any program is being developed to keep a long-term relationship with customers, a firm needs to identify exactly what customers do value and how to continually create net worth for them. More importantly, firms should actively enable their customers to move from passive information sources and recipients of products and services to empowered knowledge partners. That is, the mindset of a firm should treat customers as a potential source of knowledge and value rather than as a source of revenue and share this value with customers (Gibbert et al., 2002). Though most firms today consider themselves as customer-oriented, few are actually managing well their most precious resource: knowledge from customers, as opposed to knowledge about customers. Gibbert et al.'s (2002) empirical evidence revealed that by managing knowledge from customers effectively, firms are more likely to sense emerging market opportunities before their competitors and to more rapidly create economic value for the firm and its customers. In this regard, the challenges are how to engage in an active and

value-creating dialogue with customers to motivate customers to share their experiences and knowledge with the firm's products and services, their skills and reflections (Gibbert et al., 2002). Denning (2011), Pavicic et al. (2011) and Woodcock et al. (2011) suggested the use of social media (e.g., Twitter, Facebook, or a blog) as the new platforms for CRM that enables firms to provide new forms of customer insight for marketing campaigns.

Finally, one reason could be advanced for this finding. From the in-depth interviews with the major CRM managers at the selected banks, there was no evidence of systematic research about the use of customer knowledge on customer value. Where this was carried out, it was normally customer feedback and complaint, focusing on the use of the improvement of customer satisfaction. Thus, information was rarely put to good use in the research about customer value. This is supported by Lin et al.'s (2009) empirical finding in the context of the banking in Taiwan. Their finding indicated that the key relies not how well a firm can grasp the information about customers and their behaviours, but how well it can create and deliver superior value of services and products. According to Mueller (2010), although the bank's sales force has the sophisticated sale information through CRM to work more effectively and efficiently, perfect customer data collection and analysis still are not enough. Instead, they should be clearer in their products and services offer that the customers value (Donaldson and O'Toole, 2007). Then CRM could play a role well in creating customer value and increasing customer satisfaction for establishing a long-term customer relationship.

Overall, the results found that customer interaction is more important than other factors of CRM influencing customer value, having a significantly high path coefficient in the

research model (path coefficient = .504). This is considered sensible, at least in the Taiwanese banking setting, because personal interaction is more likely to affect customer perceived value in products and services, information and social exchange. In addition, it should be noted that the finding of this thesis is the first to provide an empirical insight into the role of customer value as being an important consequence of CRM. The result provides additional support for it.

6.2.2 CRM and Customer Satisfaction

Another objective of this thesis is to explore whether CRM positively influences customer satisfaction. Four hypotheses (i.e., H1b, H2b, H3b and H4b) were proposed, indicating the associations between each construct of CRM and customer satisfaction, respectively. The results showed that customer satisfaction is significantly and positively affected by CKM capability and customization but not customer knowledge and customer interaction. Therefore, the results provide supporting evidence for H2b and H4b.

CKM capability was found to have a statistically significant relationship with customer satisfaction. The result is in agreement with the empirical finding of Croteau and Li (2003) that knowledge management capability as the most significant CSF in CRM can foster effective and efficient management of customer services which thus contribute to customer satisfaction, and with the finding of Jayachandran et al. (2005) that knowledge management capability positively affects the performance of customer satisfaction, because it helps firms communicate better with their customers, capture data more effectively, enable customer service employees to access consolidated customer

information and enhance senior management's decision-making ability. This finding is supported by Mithas et al. (2005), who stated that CKM capability subsequently drives customer satisfaction because firms can use it to tailor their offerings to suit their customers' requirements, and by Karakostas et al.'s (2005) empirical finding, in the context of financial services in B to C setting, that the effective management capability of knowledge is central and critical for offering the customers a variety of products and services tailoring to their needs, services innovation and lower price which result in increasing customer satisfaction.

Moreover, several scholars (Buttle, 2010; Battor and Battor, 2010; Cravens and Piercy, 2009; Kotler et al., 2008; Lin et al., 2010; Liang and Wang, 2005; Richards and Jones, 2008; Sigala, 2005; Plakoyiannaki and Tzokas, 2002; Minna and Aino, 2005; Soliman, 2011; Thomas et al., 2004; Wang and Feng, 2012) also have provided additional supporting evidence for this result. A significantly positive relationship between CKM capability and customer satisfaction is implied because CKM capability facilitates organisational operations in: 1) improving the effectiveness of market segmentation which enables customer targeting for more effective and efficient targeting of marketing resources, 2) exploring the knowledge of customer satisfaction drivers that reflects properly customer requirement, 3) developing more customized products and services, 4) support quicker responses to customer service and 5) sustaining continual product and service innovations and improvements.

Overall, CKM capability is a customer relating ability which concretizes the implementation of customer relationship orientation (Day, 2000), which is the key to manage customer satisfaction and customer loyalty (Mithas et al., 2005). Consequently,

by employing organizational CKM capability to continuously improve and to innovate the firm's offerings that benefit customers, it is more likely to capture customers' real needs and thus gain the increase in customer satisfaction (Jayachandran et al., 2005).

Next, another result in this thesis was that customization has a significantly positive impact on customer satisfaction. The finding indicated that the banks consider customisation as an effective driver of customer satisfaction, because it is more likely to reflect the customers' real needs. Indeed, with advances in IT, such as technology in the form of highly self-service Internet offerings, firms have had more abilities to customize their offerings to respond to individual specific needs (Richards and Jones, 2008). The finding is supported by Bettencourt and Gwinner (1996), who stated that customized service would satisfy customers more than standardized service, and by Mithas et al. (2005), who argued that customised offerings enhance customers' perceptions of the quality and thus positively affect customer satisfaction because it suits their individual tastes. That is, customization has great potential in facilitating firms to create higher customer satisfaction, because it enhances the degree of customer orientation and reflects the high extent of meeting the explicit and implicit customers needs (Peelen, 2005; Liang and Wang, 2005; Peppers and Rogers, 2011; Sin et al., 2005; Simonson, 2005; Tu et al., 2001; Wang et al. 2010). Therefore, customization should be better service than routine service that does not meet the individual's needs, and should produce a more satisfactory relationship because customers become aware of the special treatment that serves as "glue" to cement the relationship (Ball et al., 2006; Richards and Jones, 2008).

In addition, the lack of the relationship between customer knowledge and customer satisfaction in this thesis is surprising. From a theoretical viewpoint, the significant relationship between them appears intuitively obvious, though it is subjected to limited empirical studies. However, a common consensus in literature is that customer knowledge enables firms to cultivate customer satisfaction by continually adapting to the evolving needs and wants of customers and assisting in products and services innovation and improvements (Garcia-Nurillo and Annabi, 2002; Mithas et al., 2005; Mack et al., 2005; Richards and Jones, 2008). That is, customer knowledge, the real value of CRM, should be able to drive customer satisfaction and decrease the chance of loyal customers if firms can organize and utilise it effectively and also proactively and consistently provide better products and services on the basis of evolving service experiences and customers' needs (Mithas et al., 2005). Therefore, a potential explanation for this might be that Taiwanese banks neglected its utilisation and did not consciously associate it with the research of customer satisfaction. This is supported by the interviews with the major CRM managers at the selected banks that there was no evidence of systematic research on customer satisfaction being conducted. Thus, customer knowledge was rarely put to use in the study of customer satisfaction, particularly the lack of the use of knowledge from customers in the improvement and the innovation of offerings.

Next, the result showed that customer interaction was not found to directly impact on customer satisfaction, but had an indirect effect on customer satisfaction that is mediated by customer value. In practice, Taiwanese banks have endeavoured to improve the quality of customer interaction, e.g. 24 hours self-service banking to provide more convenience and customer service centre with the staff training to respond

to customers in a timely and appropriate way. Therefore, a potential explanation might be that the performance of customer interaction was reflected on customer value rather than customer satisfaction, representing an indirect effect on customer satisfaction via customer value. However, according to Cravens and Piercy (2009), Kotler et al. (2008), Jayachandran et al. (2005), Sin et al. (2005) and Zablah et al. (2004), through the appropriateness of customer interaction, not only can firms improve customer satisfaction, but create a mutually trusted relationship.

In answering the first research question to fulfil the aims of this thesis proposed in section 1.4, this thesis extends the current research on CRM by demonstrating that both customer value and customer satisfaction should be understood as the significant consequences of CRM in a customer-to-firm relationship. Specifically, this thesis contributes to CRM theory and practice by representing the positive linkages between CRM (i.e., customer interaction and customisation) and customer value and between CRM (i.e., CKM capability and customisation) and customer satisfaction. Moreover, no studies could be found in the relevant literature that had tested explicitly whether these key constructs of CRM were associated with customer value and customer satisfaction in a single model.

6.3 The Consequences of Customer Value on Customer Satisfaction and Customer Loyalty

This section explains the results of testing the hypotheses related to the influences of customer value on customer satisfaction and customer loyalty. For this purpose, H5 and H6 were proposed to examine these relationships. The results in section 6.3 combining

with those in section 6.4 and 6.5 aim to answer the second research question.

Q2: Following from 1, the indicators of CRM performance, such as customer value, customer satisfaction, customer loyalty and CLV, are used as the key measures to monitor the CRM-performance relationship. What are the causal relationships between these outcomes?

6.3.1 Customer Value and Customer Satisfaction

It was hypothesised that customer value positively affects customer satisfaction. As expected, the result demonstrated that customer value is an important variable in predicting customer satisfaction, showing evidence to support H5. Specifically, the result implied that if the customer receives superior value, the customer would form positive perceptions of customer satisfaction. Therefore, the result confirmed previous empirical studies in the literature (Andreassen and Lindestad, 1998; Cronin et al., 2000; Eggert and Ulaga, 2002; Fornell et al., 1996; Hellier et al., 2003; Lin et al., 2009; McDougall and Levesque, 2000; Patterson and Spreng, 1997; Ulaga and Eggert, 2006; Wang et al., 2004). For example, Hallowell (1996) and Patterson and Spreng (1997) argued that customer value in service settings is crucial in improving customer satisfaction, because customer satisfaction is the result of a customer's perception of the value received in a relationship. Customer value should be viewed as a contributing factor to customer satisfaction, because customers would become more satisfied as they receive benefits more than the sacrifices (Woodruff, 1997). Firms improve customer satisfaction by adding more value to their offerings so that the connection of customer relationship is also strengthened. Similarly, Ulaga and Eggert (2006) suggested that

firms should view customer value as the pivotal role of relationship marketing so that they could increase customer satisfaction and thus do more business with existing customers. In addition, the finding of this thesis is also consistent with Wang et al. (2004), who stated that increased customer value and decreased customer sacrifice really leads to the higher customer satisfaction, and with Lin et al. (2009), who argued that better customer satisfaction can be achieved by fortifying all aspects of customer value, with functional value excluded. They suggested that Taiwanese banks should leverage CRM to analyse and raise their customer value that may be conducive to detecting their niche and satisfying their customers. In short, if customer value reduces or increases after the purchase, the customer becomes less or more satisfied, which in turn affects subsequent customer value expectations, purchase behaviour and overall customer satisfaction (Hellier et al., 2003).

6.3.2 Customer Value and Customer Loyalty

Furthering the aim of investigating customer value as a consequence of CRM and an antecedent of customer satisfaction and customer loyalty, it was hypothesised that customer value is positively related with customer loyalty. Therefore, hypothesis H6 was formulated to test this association.

Inconsistent with the expectation, the result showed that customer value does not significantly influence customer loyalty directly, but via customer satisfaction, indicating that hypothesis H6 was not supported. Although customer value exhibits an indirect effect on customer loyalty via customer satisfaction, this does not mean that banks can neglect the effect of customer value on customer loyalty, because an indirect

relationship also can generate a positive and direct impact via customer satisfaction. That is, customers are more likely to become loyal, based on how they perceive value from the banks (Bolton and Drew, 1991; Lindgreen and Wynstra, 2005). Theoretically, superior customer value could build close emotional links between customers and firms and thus positively affect customer repurchase intentions (Butz and Goodstein, 1996; Patterson and Spreng, 1997; Sheth and Parvtiyar, 1995). However, the relationship between customer value and customer loyalty has been subjected to limited empirical analysis.

The result of this thesis is consistent with Wang et al. (2004), who argued that there is no significant evidence of the impact of the various dimensions of customer value (i.e., functional value, social value, emotional value and customer perceived sacrifices) on customer loyalty, and with Lin et al. (2009), who indicated that only functional value in customer value has a weak and positive impact on customer loyalty, while another three elements (i.e., social value, emotional value and customer perceived sacrifices) in the customer value aspect are not positively related to customer loyalty. Lin et al. (2009) suggested that Taiwanese banks should emphasise the variety of products and services to satisfy different needs of customers to enhance the level of customer loyalty. Furthermore, the result is partly consistent with Ulaga and Eggert (2006), who indicated that customer value has a direct impact on the customer behavioural intention to expand business with the firm, but not to decrease the propensity to leave the firm. They emphasised that customer value should be translated into higher relationship quality, i.e. customer satisfaction that in turn reduces the propensity to leave, implying that customer value affects customer loyalty via customer satisfaction.

Based on the literature and the findings of this thesis, it appears that customer value is a necessary but not a sufficient condition to stabilise customer loyalty. That is, customer value should be translated into higher customer satisfaction that in turn leads to customer loyalty.

6.4 The Consequence of Customer Satisfaction on Customer Loyalty

This thesis hypothesised that customer satisfaction is a significant determinant of customer loyalty and aimed to examine whether customer satisfaction evokes customer loyalty. This relationship was tested by using hypothesis H7 to answer the second research question.

As expected, customer satisfaction was found to have a positive and direct impact on customer loyalty. This means that customers who have a higher level of satisfaction with a bank are more likely to be loyal to it. According to Reichheld and Sasser (1990), customer satisfaction can be viewed as the driving force of customer loyalty. Therefore, raising customer satisfaction can increase customers' future loyalty. The finding is consistent with previous empirical studies. For example, the findings in the context of the banking of Cronin and Taylor (1992), Leverin and Liljander (2006) and Lin et al. (2009), demonstrated that customer satisfaction positively and directly affects customer loyalty, indicating that products or services guaranteeing a higher customer satisfaction lead to better customer loyalty. Namely, when customers feel satisfied, they will reward the banks with loyalty and repeat the purchases of products and services. Moreover, Eggert and Ulaga's (2002) and Ham's (2003) findings also confirmed that if service providers could increase the level of customer satisfaction, then they can ensure

customers' loyalty. Specifically, customer satisfaction enhances simultaneously customer behaviour intention to expand business with the firms and decreases the propensity to leave (Ulaga and Eggert, 2006).

Overall, a significantly positive relationship between customer satisfaction and customer loyalty does exist. Therefore, satisfying customers should be a top priority with the firms attempting to increase customer loyalty. The result of this thesis provided additional support for customer satisfaction being a central variable in predicting the future behaviour of customers.

6.5 The Consequence of Customer Loyalty on CLV

Though the positive association between customer loyalty and CLV has found several conceptual supports in marketing literature, this relationship is subjected to limited empirical analysis. However, the result of this thesis provided additional empirical evidence that customer loyalty has a direct and positive impact on CLV, representing support for hypothesis H8. The result is consistent with the literature (Reichheld, 1996; Reinartz and Kumar, 2000; Baldauf et al., 2003; Gupta and Lehmann, 2003; Roig et al., 2006) that loyal customers are more likely to lead to CLV due to the following reasons: 1) customer acquisition costs become low, 2) a stream of profits come from the customer, 3) customers buy more over time, 4) loyal customers may refer other potential customers and 5) loyal customers tend to become less price-sensitive. Another potential explanation might be that loyal customers tend to keep a long-term relationship with the firm and a larger proportion of the long-term customers than the short-term customers reveal high firm profits (Reinartz and Kumar, 2000). Even though a relatively small

increase in customer loyalty, it will drive relatively large increases in firm profits (Reichheld and Sasser, 1990; Reichheld and Teal, 1996; Gupta and Lehmann, 2003).

In answering the second research question, this thesis makes a further contribution by representing empirical evidence of customer value's directly positive impact on customer satisfaction and its indirect impact on customer loyalty via customer satisfaction. More importantly, customer value serving as a consequence of CRM and as a predictor of customer satisfaction and customer loyalty in one single model has been found to provide better understanding of the development of a customer-firm relationship. Additionally, this thesis provides supporting evidence on the significance of customer satisfaction being a prerequisite of customer loyalty and customer loyalty being a prerequisite of CLV.

6.6 The CRM-performance relationship from a Dyadic Perspective

The section seeks to address a CRM-performance relationship from both the internal bank's perspective and the external customer's perspectives to answer the third research question.

Q3: Does the CRM-performance relationship as seen by firms coincide with those perceived by customers?

As can be seen in Table 5.22, the result of model 1 (the bank's perspective) indicated that customer interaction and customisation explain a statistically significant relationship with customer value (path coefficient γ =.487 and .329 individually), and

CKM capability significantly and positively affects customer satisfaction (path coefficient γ =.347), but customisation does not though it has a positive path coefficient (γ =.189). The results are mostly consistent with those discussed in section 5.8 and could be explained by the analysis in section 6.2. The results related to the causal relationships between the indicators of performances, i.e. customer value, customer satisfaction, customer loyalty and CLV, are also in line with those discussed in section 5.8 and could be explained by the analysis in section 6.3 to 6.5.

In addition, the results of model 2 (the customer's perspective) showed a miserable impact of CRM on customer value and customer satisfaction, individually. The model 1 explained a significant proportion of the variance in customer value and customer satisfaction, but model 2 was not useful for explaining the influence of CRM on customer value and customer satisfaction as experienced by customers. This means that managerial perception of CRM has no any relationship with customers' perceptions of customer value and customer satisfaction. That is, managers enact their own perceptions with respect to customer value and customer satisfaction, which results in a gap between what they think they are delivering and what customers really perceive. A potential explanation might be that Taiwanese banks did not consciously associate their CRM effort with the systematic research of customer value and customer satisfaction, yet they invested in the benchmarking competition. Therefore, the results suggested that Taiwanese banks should view customer research as a priority and consistently monitor and adjust their CRM practice towards superior customer value and customer satisfaction corresponding to what customers really value and want. As to the causal relationships between the outcomes of performances, i.e. customer value, customer satisfaction, customer loyalty and CLV, the results are mostly in line with those

perceived by managers.

Finally, this thesis provided empirical evidence for the third research question that an inconsistent perception of CRM's influence on customer value and customer satisfaction between the banks and their customers does exist. Managerial perception of CRM did not create and deliver as equivalent performances as customers really perceived. Regarding the causal relationships between the outcomes of performances (i.e., customer value, customer satisfaction, customer loyalty and CLV), managerial perception is in line with customers'.

6.7 Implications

6.7.1 Academic Implications

This thesis provides a significant advance to the existing literature on CRM and RM in several ways. First, there is a lack in the literature of clarifying CRM's multiplicity and its inconsistent influence. This thesis contributes to the identification of the key constructs of CRM that specify how the divergent concept of CRM can be transformed into actionable and practical organisational activities conducive to enhancing the effectiveness of RM in customer benefits and the bank's performance. Although some of CRM's constructs expressed in this model might be used individually in the previous studies, this model's value is in integrating these various notions together in a single study to provide a holistic picture between these constructs in a CRM-performance relationship model.

Second, this thesis provides a robust methodological process, attempting to clearly define each of the underlying constructs forming a CRM-performance relationship model. For example, different items were combined together to measure each of the constructs. The assessments of the reliability and the validity of each construct using CFA confirm the correspondence rules between both empirical and theoretical concepts. Empirical evidence of this thesis reveals that the testable scales are reliable and valid. Therefore, combining these methodologies with the purified measurement items of this thesis represents a useful theoretical and empirical insight for future research into the CRM-performance relationship.

Third, from the bank's perspective, this research model was found to have a substantial and positive CRM-performance relationship though it does not from the customer's perspective. However, the findings reflect that the use of CRM could help the banks improve customer benefits and the organizational performance. Thus, the findings are encouraging and provide a constructive foundation on which further theoretical and empirical research of a CRM-performance relationship can be guided and built.

Fourth, According to Reimann et al. (2010) and Zablah et al. (2004), the lack of important mediating variables between CRM and the firm's performance may exist and have not been completely considered. Most studies investigating a CRM-performance relationship have neglected the use of customer value as a critical mediating role. Therefore, in furthering understanding about how customers become loyal to firms, which in turn benefits CLV, this thesis contributes to the theory of CRM and RM by demonstrating that customer value is an important consequence of CRM and a critical driver in determining customer satisfaction. In addition, the results identify that

customer value and customer satisfaction work well together in evoking customer loyalty, indicating that the inclusion of customer value provides an additional contribution to effectively make the linkages between CRM, customer benefits and the firm's performance.

Fifth, CRM has globally become a trend and raised the academics' and the practitioners' concerns about the uses of cross-cultural research. This research is one of the few that tests the applicability of academically developed CRM model in Non-Western context, particularly in the Chinese-Commonwealth setting. The results could offer an additional insight into the existing literature, because the Taiwanese perspective is substantially different from the Western perspective.

Finally, to the best of the author's knowledge, this thesis may be the first study to provide a relatively completed insight on a CRM-performance relationship from a dyadic perspective in a single study. The innovation in this thesis was in obtaining data for CRM's constructs from managers. Data for customer value, customer satisfaction, customer loyalty and CLV was obtained from both managers and customers. The instrument for measuring customer value, customer satisfaction, customer loyalty and CLV was identical for managers and customers. The requirement for banks is to practice their CRM best to improve customer benefits and the organizational performances; thus, instead of only depending on the bank's perception, this thesis is also interested in evaluating how customers experienced these performances created by the banks.

6.7.2 Managerial Implications

From the bank's perspective, this research provides several managerial guidelines for banks to practise their CRM. First, banks should understand the central role of CRM in creating superior value to make their customers become satisfied and loyal, which in turn results in the increase of CLV. The results indicate that banks should simultaneously focus on the development of better customer interaction and customization, because these two factors individually have direct and positive influences on customer value, which can drive customer satisfaction directly and customer loyalty indirectly. Therefore, customer interaction is required to provide more activated services, implying the significance of interpersonal interaction and the needs of installing state-of-the-art IT infrastructure. In addition, more customised products and services is another priority. This means that banks should actively change their behaviors to respond quickly with an offering trailed to the customer's specific requirement. This also suggests that the empowerment of frontline employees in the service setting is significant so that they can have latitude over their service activities and abilities to respond to customers' needs in a customer-centric manner.

Second, the results suggest that CKM capability should be constantly and effectively facilitated in all business processes of customer relationship orientation so that customer satisfaction can be improved. This requires top management dedication in the improvement of organizational knowledge infrastructure and knowledge processes. This includes the changes in organisational culture, structure, technology and supportive system that can activate knowledge creation, dissemination, sharing and application in all organisational business processes.

Third, the findings validate the long-held belief that CRM positively influences customer benefits and the firm's performance. Consequently, to maintain a steady of firm profits, banks should constantly monitor their CRM practice so that they could keep themselves on the track of a better level of customer benefits and organizational performance. The proposed integrated model, therefore, could be used as a diagnostic matrix to identity the areas where specific improvements are needed and to pinpoint the aspects of the bank's CRM practice that require more work to be conducted effectively.

From the customer's perspective, first CRM did not exert its influence on customer value and customer satisfaction as expected. The findings lead us to conclude that there is an inconsistency of the perception of desired CRM benefits between banks and customers. Therefore, the findings suggest that banks should value the customers' perspective as a guideline for verifying the aspects of CRM practice that should be improved precisely. Next, the findings also activate banks to discover the true drivers of customer value and customer satisfaction by using market research, data collection and analysis procedures. They should really invest in their CRM practice that would contribute to promoting customer benefits.

Finally, though the findings show that CRM's effect on customer value and customer satisfaction as evaluated by banks did not coincide with those perceived by their customers, it still sends a rather chilling message about a CRM-performance relationship evaluated from a dyadic perspective.

6.8 Research Limitations

Although this thesis has provided relevant and interesting insights into the understanding of a CRM-performance relationship, it has several limitations that need to be recognised in terms of the context of this thesis, the measure of constructs and data collection.

First, attention on the results might be taken, because sample data only reflects the respondents' perspective in Taiwan and thus limits the generalizability of the findings. This could make the results not entirely comparable. Consequently, it would be useful to obtain a broader and wider sampling frame from other countries because different cultural contexts might affect the respondents' perceptions, attitudes and behaviours to view the relationship. In addition, the research setting would limit the generalizability of the findings to different industries other than the banking industry. Therefore, it would be practical to test the generalizability of the measures and the research framework in different business settings and in other countries.

Second, another potential limitation is related to the equivalence of the measure of CRM's benefits (i.e., customer value, customer satisfaction, customer loyalty and CLV) used in this thesis. The problem might be associated with different levels of familiarity with questionnaires between the relatively well-educated managers and the relatively heterogeneous sample of customers. Given the significant differences in customer service perspective adopted by managers and customers, there is a need for in-depth study to establish whether managers and customers in responding to the questions about CRM's benefits use the equivalent scales.

Finally, the cross-sectional data was used in this research, representing static relationships between underlying constructs in the research model. Consequently, the time sequence of the relationship cannot be captured explicitly because of the nature of the cross-sectional study. The results, therefore, might not be interpreted as the proof of a causal relationship. To understand the CRM's influence over time, a longitudinal framework would provide more insight into probable causations.

6.9 Directions for Further Research

Though this thesis has represented an attempt to build up an integrative framework which delineates a CRM-performance relationship, several directions for the further research are suggested to extend the current body of knowledge in the literature on CRM and RM.

First, given that the results of this thesis are limited to the Taiwanese perspective, the generalizability of findings should be identified when other cultural factors are considered. According to Davis et al. (2008) and Gilbert and Tsao (2000), CRM should consider cultural influences as the determinants of marketing behaviour because customer responses are varied between cultures. This suggests a need for cross-cultural research in other countries, such as Chinese Commonwealth (i.e., Mainland China, Hong Kong, Macau and Singapore) or European countries, to investigate whether different cultural perspectives reflect in the same way, or there is something unique about the Taiwanese perspective.

Second, future researchers are encouraged to explore whether the proposed framework of the CRM-performance relationship holds in different business settings, For example, in the B-to-B contexts a firm usually receives all the customers' business after the customers sign up for the service. Therefore, the implications might be different in the contexts where the relationships are generally founded on formal agreements and contracts. Meanwhile, managing customer relationship may be different in the high customer-involved setting than the business setting where customer services are lowly customer-involved.

Third, previous studies suggested that the differences in the business settings may affect the type of organisational strategy adopted. Therefore, continued refinement of the measure of CRM's constructs is possible and even desired in response to the changes in the business settings. To keep up with the changing business settings, future research is suggested to incorporate relevant aspects in the scale into CRM's measure, so that a valid measure of CRM can be ensured on an ongoing basis.

Finally, the findings are the first step towards an in-depth understanding of the operationalization of key constructs of CRM and their differentiated effects on customer benefits and the firm's performance. Since there are potential other CRM's constructs and its consequences, it would be useful and practical if they were to be modelled and tested.

6.10 Conclusions

The aim of CRM is to build a long-term relationship between the firm and its customers where the mutual benefits can be achieved. In this context, this thesis makes a significant contribution to the CRM and RM literature by providing alternative insight into the influence of CRM on the customer's benefits and the firm's performance from a dyadic perspective in one single model. Although there could be other potential constructs to be incorporated in this model, this research includes a set of key constructs of CRM that could capture the nature of CRM practice and be universally used to enhance the customer's benefits and the firm's performance.

From the bank's perspective, statistical findings generally have supported the research framework proposed in Chapter Three. The results have revealed that CKM capability, customer interaction and customization, but not customer knowledge, are important in creating superior customer value and customer satisfaction. This indicates that banks should put more effort on interacting with customers and customising their offerings in order to create superior customer value, and on developing CKM capability to improve customer satisfaction. However, customer knowledge seemed not necessary for use in the banking setting. In addition, from the customer's perspective, the effect of CRM on his value and satisfaction was statistically insignificant. This means that the differences of the perception between banks and their customers should urge the banks to conduct CRM practice more effectively and precisely.

Moreover, adopting the perspective of Boulding et al. (2005), Payne and Frow (2005) and Ulaga and Eggert (2006) that the creation of value for customers should be the core

of a firm-customer relationship, it can be concluded that this research is the first study to include customer value as a core consequence of CRM and as a critical driver of other outcomes in the proposed research model in one single study. The empirical findings support the above scholars' perspective. Thus, this thesis has provided the further understanding of a CRM-performance relationship, which would be constructive for both academics and practitioners in the banking setting.

Moreover, from a dyadic perspective, customer value and customer satisfaction in the proposed framework have served as the important determinants of customer loyalty, while customer value only has an indirect effect on customer loyalty via customer satisfaction. In this context, it has been found that when customers perceive superior value from the bank and satisfy with them, they would become more loyal, which in turn leads to increase CLV. As a result, it is important to highlight that the objective of CRM should be to create superior customer value as a priority which ultimately affects CLV.

Finally, this thesis has fortified the understanding of a CRM-performance relationship in practice in Taiwanese banking sector by linking CRM, customer value, customer satisfaction, customer loyalty and CLV as the underlying constructs forming the research model. However, the researcher notes that this is a preliminary attempt to study a large and complex issue, in which a tested theoretical framework has been provided. Within this framework, further advances in knowledge can be made by deepening the search for the sources of best CRM practice and by expanding it across industries and national boundaries. Therefore, the researcher hopes this study serves as a foundation for an effort to sharpen the understanding of the CRM-performance relationship.

Reference

Abbott, J., Stone, M. and Buttle, F. (2001), "Customer relationship management in practice - A qualitative study," Journal of Database Marketing, Vol. 9, No. 1, pp. 24-34.

Adler, P. and Kwon, S. W. (2002), "Social capital: Prospects for a new concept," Academy of Management Review, Vol. 27, pp. 17-40.

Alavi, M. and Leidner, D. (1999), Knowledge Management Systems: Emerging Views and Practices from the Field, Proceeding of the 32nd Hawaii International Conference on System Sciences.

Allen, C. (2003), Personalization vs customization, Allen.com, available at: www.allen.com.

Amaratunga, D., Baldry, D., Sashar, M. and Newton, R. (2002), Quantitative and qualitative research in the built environment: application of "mixed" research approach: a conceptual framework to measure FM performance, Work Study (renamed International Journal of Productivity and Performance Management), Vol. 20, No. 1, pp. 17-31.

Anderson, J. C. and Gerbing, D. W. (1982), "Some methods for respecifying measurement models to obtain unidimensional construct measurement," Journal of Marketing Research, Vol. 19, No. 4, pp. 453-460.

Anderson, J. C. and Gerbing, D. W. (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," Psychological Bulletin, Vol. 103, No. 3, pp. 411-423.

Anderson, J. C. and Narus, J. A. (1990), "A model of distributor firm and manufacturer firm working partnerships," Journal of Marketing, Vol. 54, No. 1, pp. 42-58.

Anderson, E. W. and Sullivan, M. W. (1993). "The Antecedents and Consequences of Customer Satisfaction for Firms," Marketing Science, Vol. 12, No. 2, pp. 125-143.

Anderson, E. W., Fornell, C. and Lehrmann, D. R. (1994), "Customer satisfaction, market share, and profitability: findings from Sweden," Journal of Marketing, Vol. 58, pp. 53-66.

Andreassen, T. W. and Lindestad, B. (1998), "Customer Loyalty and Complex Services," International Journal of Service Industry Management, Vol. 9, No. 1, pp. 7-23.

Armstrong, R. and Seng, T. (2000), "Corporate-customer satisfaction in the banking industry of Singapore," The International Journal of Bank Marketing, Vol. 18, No. 3, pp. 97- 111.

Bagozzi, R. P. and Yi, Y. (1988), “On the Evaluation of Structural Equation Models, Journal of the Academy of Marketing Science,” Vol. 16, No. 1, pp. 74-94.

Baldauf, A., Cravens, K. S. and Binder, G. (2003), “Performance Consequence of Brand Equity management: evidence from organizations in the value chain,” The Journal of Product and Brand Management, Vol. 12, pp. 220-234.

Ball, D., Coelho, P. S. and Machas, A. (2004), “The role of communication and trust in explaining customer loyalty: An extension to the ECSI model,” European Journal of Marketing, Vol. 38, No. 9/10, pp. 1272-1293.

Ballantyne, D. and Varey, R. (2006), “Creating value-in-use through marketing interaction: the exchange logic of relating, communication and knowing,” Marketing Theory, Vol. 6, No. 3, pp. 335-348.

Baloglu, S. (2002), “Dimensions of customer loyalty: Separating friends from well wishers,” Cornell Hotel and Restaurant Administration Quarterly, Vol. 43, No. 1, pp. 47-59.

Bandyopadhyay, S. and Martell, M. (2007), “Does attitudinal loyalty influence behavioral loyalty? A theoretical and empirical study,” Journal of Retailing and Consumer Services, Vol. 14, pp. 35-44.

Battor, M. and Battor, M. (2010), “The impact of customer relationship management capability on innovation and performance advantages: testing a mediated model,” Journal of Marketing Management, Vol. 26, No. 9-10, pp. 842-857.

Battista, P. and Verhun, D. (2000), “Customer Relationship Management - The Promise and the Reality,” CMA Management, Vol. 74, No. 4, pp. 34-37.

Barnes, J. G. (2000), “Secrets of Customer Relationship Management: it’s all about how you make them feel,” McGraw-Hill.

Bell, S. J. and Eisingerich, A. B. (2007), “The paradox of customer education; Customer expertise and loyalty in the financial services industry,” European Journal of Marketing, Vol. 41, No. 5/6, pp. 466-486.

Bennett, R. (1996), “Relationship formation and governance in consumer markets: transactional analysis versus the behaviourist approach,” Journal of Marketing Management, Vol. 12, No. 12, pp. 417-436.

Bentler, P. M. and Chou, C. P. (1987), “EQS: Practical issues in structural modeling,” Sociological Methods and Research, Vol. 16, pp. 78-117.

Bentler, P. M. (1995), EQS: Structural Equation Program Manual. Encino, CA: Multivariate Software, Inc.

Berger, P. D. and Nasr, N. I. (1998), “Customer lifetime value: marketing models and applications,” Journal of Interactive Marketing, Vol. 12, No. 1, pp. 17-30.

Berry, L. L. (1983), Relationship marketing. In L. L. Berry, G. L. Shostack and G. D. Upah (Eds.), Emerging Perspective on Services Marketing (pp. 25-38). Chicago: American Marketing Association.

Berry, L. L. and Parasuraman, A. (1991), Marketing services - Competing Through Quality, New York: Free Press.

Berry, L. L. (1995), "Relationship marketing of services - growing interest, emerging perspective," Journal of the Academy of Marketing Science, Vol. 23, No. 4, pp. 236-245.

Berry, L. L. (2002), "Relationship Marketing of Services - Perspectives from 1983 and 2000," The Journal of Relationship Marketing, Vol. 1, No. 1, pp. 59-77.

Berry, L. L. (2002), Relationship marketing of services: Growing interest, emerging perspectives. In, J. N. Sheth and A. Parvatiyar (Eds), Hand book of Relationship Marketing (pp. 3-38). Thousand Oaks, CA: Sage Publications.

Bettencourt, L. A. and Gwinner, K. (1996), "Customization of the service experience: the role of the frontline employee," International Journal of Service Industry Management, Vol. 7, No. 2, pp. 3-20.

Bitner, M. J., Brown, S. W. and Meuter, M. L. (2000), "Technology Infusion in Service Encounters," Journal of the Academy of Marketing Science, Vol. 28, No. 1, pp. 138-149.

Bitran, G. R. and Mondschein, S. (1996), "Mailing decisions in the catalog sales industry," Management Science, Vol. 42, No. 9, pp. 1364-1381.

Blattberg, R.C. and Deighton, J. (1996), "Manage marketing by the customer equity test," Harvard Business Review, pp. 136-144.

Blery, E. and Michalakopoulos, M. (2006), **"**Customer relationship management: A case study of a Greek bank," Journal of Financial Services Marketing, Vol. 11, pp. 116-124.

Bloemer, J. and De Ruyter, K. (1998), "On the relationship between store image, store satisfaction and store loyalty," European Journal of Marketing, Vol. 32, No. 5/6, pp. 499-513.

Blosch M. (2000), "Customer Knowledge, Knowledge and Process Management," Vol. 7, No. 4, pp. 265-268.

Bollen, K. A. (1989). Structural Equations with Latent Variables. New York: Wiley.

Bollen, K. A., and Long, J. S. (1993). Testing Structural Equation Models, Newbury Park: Sage Publications.

Bolton, R. N. and Drew, J. H. (1991), "A Multistage Model of Customers' Assessments of Service Quality and Value," Journal of Consumer Research, Vol. 17, No. 4, pp. 375-384.

Bolton, R. N. (1998), "A Dynamic Model of the Duration of the Customer's Relationship with a Continuous Service Provider: The Role of Satisfaction," Marketing Science, Vol. 17, No. 1, pp. 45-65.

Bonnemaizon, A., Cova, B. and Louyot, M. C. (2007), "Relationship Marketing in 2015: A Delphi Approach," European Management Journal, Vol. 25, No. 1, pp. 50-59.

Bose, R. (2002), "Customer relationship management: key components for IT success," Industrial management and Data Systems, Vol. 102, No, 2, pp. 89-97.

Bose, R. and Sugumaran, V. (2003), "Application of knowledge management technology in customer relationship management," Knowledge and Process Management, Vol. 10, No 1, pp. 2-17.

Bose, R. (2004)**, "**Knowledge management metrics," Industrial Management + Data Systems, Vol. 104, No. 6, pp. 457-468.

Boulding, W., Kalra, A., Staelin, R. and Zeithaml, V. A. (1993), "A Dynamic Model of Service Quality: From Expectations to Behavioral Intentions," Journal of Marketing Research, Vol. 30 (February), pp. 7-27.

Boulding, W., Staelin, R., Ehret, M. and Johnston, W. J. (2005), "A Customer Relationship Management Roadmap: What Is Known, Potential Pitfalls, and Where to Go," Journal of Marketing, Vol. 69, No. 4, pp. 155-166.

Boomsma, A. (1987), The robustness of maximum likelihood estimation in structural equation models. In P. Cutance and R. Ecob(eds), Structural modeling by example (pp. 160-188). New York: Cambridge University Press.

Bowen, J. T. and Shoemaker, S. (1998), "Loyalty: A strategic commitment," Cornell Hotel and Restaurant Administration Quarterly, Vol. 39, No. 1, pp. 12-25.

Boyed, H. W., Westfall, R., and Stasch, S. F. (1977), Marketing Research-Text and Cases, Homewood. IL: Richard.D. Irwin, Inc.

Brewer, M. (2000), Research design and issues of validity, in: Reis, H. and Judd, C. (eds), Handbook of Research Methods in Social and Personality Psychology, Cambridge University Press.

Brink, A. and Berndt, A. (2009), Relationship Marketing and Customer Relationship Management, Juta and Company Ltd.

Bueren, A., Schierholz, R. and Kolbe, L. M. (2005), "Improving performance of customer-processes with knowledge management," Business Process Management Journal, Vol. 11, No. 5, pp. 573-588.

Buttery, E. A. and Wong, Y. H. (1999), "The development of a Guanxi framework," Marketing Intelligence and Planning, Vol. 17, No. 3, pp. 147-154.

Buttle, F. (2010), Customer relationship management: concepts and technologies, 2ed., Oxford: Butterworth-Heinemann.

Butz, H. E. Jr. and Goodstein, L. D. (1996), "Measuring Customer Value: Gaining the Strategic Advantage," Organizational Dynamics, Vol. 24, pp. 63-77.

Byrne, B. M. (2001), Structural Equation Modelling with Amos: Basic Concepts, Applications, and Programming. Mahwah, NJ: Erlbaum.

Campbell, A. J. (2003), "Creating customer knowledge competence: managing customer relationship management programs strategically," Industrial Marketing Management, Vol. 32, pp. 375-383.

Cannon, J. P. and Petreault, JR. W. D. (1999), "Buyer-seller relationships in business markets," Journal of Marketing Research, Vol. 36, No. 4, pp. 439-460.

Capraro, A. J., Broniarczyk, S. and Srivastava, R. K. (2003), "Factors Influencing the Likelihood of Customer Defection: The Role of Customer Knowledge," Journal of the Academy of Marketing Science, Vol. 31, No. 2, pp. 164-175.

Carmines, E. G., and Zeller, R. A. (1979). Reliability and Validity assessment. In Quantitative Applications in the Social Science Series (Vol. 17). Newbury Park: CA: Sage Publications.

Cavana, R. Y., Delahaye, B. L. and Sekaran, U. (2001), Applied Business Research: Qualitative and Quantitative Methods (3rd ed.). Milton, Qld: John Wiley andSons.

Chen, Y. C. (2011), "Financial Outlook Monthly," Financial Supervisory Commission, Executive Yuan, R.O.C., February.

Chen, I. J. and Popovich, K. (2003), "Understanding customer relationship management (CRM): People, process, and technology," Business Process Management Journal, Vol. 9, No. 5, pp. 672-688.

Chen, J. S. and Ching, R. K. H. (2004), "An empirical study of the relationship of IT intensity and organizational absorptive capability on CRM performance," Journal of Global Information Management, Vol. 12, No. 1, pp. 1-17.

Chen, J. S., Yen, H. J. R., Li, E. Y. and Ching, R. K. H. (2009), "Measuring CRM effectiveness: Construct development, validation and application of a process-oriented model," Total Quality Management and Business Excellence, Vol. 20, No. 3. pp. 283-299.

Christopher, M., Payne, A. and Ballantyne, D. (1991), Relationship Marketing: Bringing Quality, Customer Service and Marketing Together, Butterworth, London.

Churchill, G. A. (1979), "A paradigm for developing better measures of marketing constructs," Journal of Marketing Research, Vol. 16, No. 1, pp. 64-73.

Churchill, JR., G. A. and Surprenant, C. (1982), "An investigation into the determinants of customer satisfaction," Journal of Marketing Research, Vol, 19, pp. 491-504.

Churchill, G. A. (1995), Marketing Research Methodological Foundation (6th ed.), Orlando, Florida: The Dryden Press.

Colgate, M. and Stewart, K. (1998), "The challenge of relationship in services – a New Zealand study," International Journal of Services Industry Management, Vol. 9, No. 5, pp. 454-468.

Coltman, T. (2007), "Why build a customer relationship management capability?," Journal of Strategic Information Systems, Vol. 16, No. 3, pp. 301-320.

Comstock, M., Johansen, K. and Winroth, M. (2004), "From mass production to mass customization: enabling perspective from the Swedish mobile telephone industry," Production Planning and Control, Vol. 15, No. 4, pp. 362-372.

Coner, A. (2003), "Personalization and customization in financial portals," Journal of American Academy of Business, Vol. 2, No. 2, pp. 498-503.

Cravens, D. W. and Piercy, N. F. (2009), Strategic marketing, 9th ed. New York: McGraw-Hill.

Cross, R. and Baird, L. (2000), "Technology Is Not Enough: Improving Performance by Building Organizational Memory," Sloan Management Review, Spring, pp. 69-78.

Croteau, A. M. and Li, P. (2003), "Critical success factors of CRM technological initiatives," Canadian Journal of Administrative Sciences, Vol. 20, No. 1, pp. 21-34.

Cronin, J. J. Jr., Brady, M. K. and Hult, G. T. M. (2000), "Assessing the Effect of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intention in Service Environment," Journal of Retailing, Vol. 76, No. 2, pp. 193-218.

Crosby, L. A., Evans, K. R. and Cowles, D. (1990), "Relationship Quality in Services Selling: An Interpersonal Influence perspective," Journal of Marketing, Vol. 54, July, pp. 68-81.

Czepiel, J. A. and Gilmore, R. (1987), "Exploring the concept of loyalty in services," In J. A. Czepiel, C. A. Congram and J. Shanahan (Eds.), The Services Challenge: Integrating for Competitive Advantages (pp. 91-94). Chicago: IL, American Marketing Association.

Davenport T. H. and Prusak, L. (1997), "Working Knowledge: How Organizations Manage What They Know," Harvard Business School Press (Boston Massachusetts).

Davenport T. H., De Long, D. W. and Beers, M. C. (1998), "Successful Knowledge Management Projects," Sloan Management Review, Winter, pp. 43-57.

Davenport, T. H., Harris, J. G. and Kohli, A. K. (2001), "How Do They Know Their Customers so Well," MIT Sloan Management Review, Vol. 42, No. 2, pp. 63-73.

Davis, S. M. (1987), Future Perfect, Addison-Wesley Publishing, Reading, MA.

Davids, M. (1999), "How to avoid the 10 biggest mistakes in CRM," The Journal of Business Strategy, Nov/Dec, pp. 22-26.

Day, G. S. (1969), "A two-dimensional concept of brand loyalty," Journal of Advertising Research, Vol. 9, No. 3, pp. 29-35.

Day, G. S. and Wensley, R. (1988), "Assessing advantage: a framework for diagnosing competitive superiority," Journal of Marketing, Vol, 52, pp. 1-20.

Day, G. S. and Van den Bulte, C. (2002), "Superiority in customer relationship management: consequences for competitive advantage and performance," working paper, Wharton School, University of Pennsylvania.

Day, G. S. (2003), "Creating a Superior Customer-Relating Capability," Sloan Management Review, Spring, pp. 77-82.

Day, G. S. (2011), "Closing the Marketing Capabilities," Journal of Marketing, Vol. 75 (July), pp. 183-195.

Day, G. S. and Moorman, C. (2010), Strategy from the Outside In: Profiting from Customer Value, McGraw-Hill.

Denning, S. (2011), "The essential metric of customer capitalism is customer outcomes," Strategy & Leadership, Vol. 39, No. 4, pp. 12-18.

Denzin, N. K. and Lincoln, Y. S. (1994), Entering the field of qualitative research. In N.K. Denzin and Y.S. Lincoln (eds) Handbook of Qualitative Research. London: Sage Publications, pp. 1-17.

Deshpandé, R., Farley, J. U. and Webster, F. E. Jr. (1993), "Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis," Journal of Marketing, Vol. 57, January, pp. 23-27.

De Vellis, R. F. (1991), Scale development : theory and application, Newbury Park, California: Sage.

De Wulf, K., Odekerken-Schroder, G. and Iacobucci, D. (2001), "Investment in consumer relationships: Across-country and cross-industry exploration," Journal of Marketing, Vol. 65, No. 4, pp. 33-50.

De Wulf, K., Odekerken-Schroder, G., and Van Kenhove, P. (2003), "Investments in consumer relationships: A critical reassessment and model extension," The International Review of Retail, Distribution and Consumer Research, Vol. 13, No. 3, pp. 245-261.

Diamantopoulos, A. and Siguaw, J. A. (2000), Introduction LISREL: A guide for the uninitiated. Thousand Oaks, CA: Sage.

Dick, A. S. and Basu, K. (1994), "Customer Loyalty: Toward an Integrated Conceptual Framework," Journal of the Academy of Marketing Science, Vol. 22, No. 2, pp. 99-113.

Dickson, P. R., Lassar, W. M., Hunter, G. and Chakravorti, S. (2009), "The Pursuit of Excellence in Process Thinking and Customer Relationship Management," Journal

of Personal Selling & Sales Management, Vol. XXIX, No. 2, pp. 111–124.

Ding, L., Velicer, W. F., and Harlow, L. L. (1995), "Effects of estimation methods, number of indicators per factor, and improper solutions on structural equation modeling fit indices," Structural Equation Modeling, Vol. 2, pp. 119-143.

Dillon, W. R., Madden, T. J. and Firtle, N. H. (1993), Essential of Marketing Research (1st ed.). Ilinois: Irwin, Homewood.

Dodds, W. B., Monroe, K. B. and Grewal, D. (1991), "Effects of price, brand and store information on buyers' product evaluations," Journal of Marketing Research, Vol. 28, pp. 307-319.

Donaldson, B. (2007), Sales management: principles, process and practice, 3rd Edition, Palgrave Macmillan.

Donaldson, B. and O'Toole, T. (2007), Strategic Market Relationships: From Strategy to Implementation, 2nd Edition, Waterford Institute of Technology, IRELAND.

Doyle, S. (2001), "The role of interaction management system in the management of customer relationships," Journal of database Marketing, Vol. 8, No. 4, pp. 370-375.

Doyle, P. and Stern, P. (2006), Marketing management and strategy, 4th ed. Harlow: Financial Times Prentice Hall.

Duray, R., Ward, P. T., Milligan, G. W. and Berry, W. L. (2000), "Approaches to mass customization: configurations and empirical validation," Journal of Operations Management, Vol. 18, pp. 605-625.

Dwyer, F. R., Schurr, P. H. and Oh, S. (1987), "Developing buyer-seller relationships," Journal of Marketing, Vol. 51, April, pp. 11-27.

Egan, J. (2005), Relationship Marketing: Exploring Relational Strategies in Marketing (3nd ed.). Harlow: Pearson Education Limited.

Eggert, A. and Ulaga, W. (2002), "Customer Perceived Value: A Substitute for Satisfaction in Business Marketing?," The Journal of Business and Industrial Marketing, Vol. 17, No. (3/2), pp. 107-118.

Eid, R. (2007), "Towards a Successful CRM Implementation in Banks: An Integrated Model," The Service Industries Journal, Vol. 27, No. 8, pp. 1021-1039.

Eisingerich, A. B. and Bell, S. J. (2007), "Maintaining customer relationships in high credence services," Journal of Services Marketing, Vol. 21, No. 4, pp. 253-262.

Ennew, C. and McKechnie, S. (1998), "The financial services customer," in Gabbott, M. and Hogg, G. (eds.), Consumers and Services, Chichester: John Wiley and Son, pp. 185-207.

Farquhar, J. D., Panther, T. And Wright, L. T. (2008), "To have and to hold: managing channels in UK high street financial services," Qualitative Market Research: An International Journal, Vol. 11, No. 4, pp. 425-438.

Flint, D. J., Woodruff, R. B. and Gardial, S. F. (1997), "Customer Value Change in Industrial Marketing Relationships," Industrial Marketing Management, Vol. 26, pp. 163-175.

Ford, D. (1990), Understanding business markets: Interaction, relationships and network, London: Academic Press.

Fornell, C. (1992), "A National Customer Satisfaction Barometer: The Swedish Experience," Journal of Marketing, Vol. 56, No. 1, pp. 6-21.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J. and Bryant, B. E. (1996), "The American Customer Satisfaction Index: Nature, Purpose, and Findings," Journal of Marketing, Vol. 60, No. 4, pp. 7-18.

Fornell, C. (1999), "Customer Satisfaction and Shareholder value," Fourth World Congress for Total Quality Management, Sheffield, pp. 28-30.

Fornell, C., Mithas, S., Morgeson, F. and Krishnan, M. S. (2006), "Customer Satisfaction and Stock Prices: High Returns, Low Risk," Journal of Marketing Research, Vol. 70, No. 1, pp. 3-14.

Fornell, C., Rust, R. and Dekimpe, M. G. (2010), "The Effect of Customer Satisfaction on Consumer Spending Growth," Journal of Marketing Research, Vol. XLVII, pp. 28-35.

Fournier, S. and Yao, J. L. (1997), "Reviving brand loyalty: A reconceptualization within the framework of consumer - brand relationships," International Journal of Research in Marketing, Vol. 14, pp. 451-472.

Frazer, L. and Lawley, M. (2000), Questionnaire Design and Administration: A practical Guide. Milton, Qld: Wiley.

Gabbott, M. and Hogg, G. (1998), Consumers and services, England: Wiley.

Ganesan, S. (1994), "Determinants of long-term orientation in buyer-seller relationships," Journal of Marketing, Vol. 58, No. 2, pp. 1-19.

Garbarino, E. and Johnson, M. S. (1999), "The different roles of satisfaction, trust, and commitment in customer relationships," Journal of Marketing, Vol. 63, pp. 70-87.

Garcia-Murillo, M. and Annabi, H. (2002), "Customer knowledge management," Journal of the Operational Research Society, Vol. 53, pp. 875-884.

Gebert, H., Geib, M., Kolbe, L. and Brenner, W. (2003), "Knowledge-enabled customer relationship management: Integrating customer relationship management and knowledge management concepts[1]," Journal of Knowledge Management, Vol. 7, No. 5, pp. 107-123.

Ghani, N. H. A. (2012), "Relationship Marketing in Branding: The Automobile Authorized Independent Dealers in Malaysia," International Journal of Business and Social Science, Vol. 3, No. 5, pp. 144-154.

Gilbert, D. and Tsao, J. (2000), "Exploring Chinese cultural influences and hospitality marketing relationships," International Journal of Contemporary Hospitality Management, Vol. 12, No. 1, pp. 45-53.

Gibbert, M., Leibold, M. and Probst, G. (2002), "Five Styles of Customer Knowledge Management and How Smart Companies Use Them To Create Value," European Management Journal, Vol. 20, No. 5, pp. 459-469.

Gilmore, J. H. and Pine, B. J. II (1997), "The Four Faces of Mass Customization," Harvard Business Review, January-February, pp. 91-101.

Gold, A. H., Malhotra, A. and Segars, A. H. (2001), "Knowledge management: An organizational capabilities perspective," Journal of Management Information System, Vol. 18, No 1, pp. 185-214.

Goodman, J., O'Brien, P. and Segal, E. (2000), "Selling Quality to the CFO," Quality Progress, March.

Greenberg, P. (2010), CRM at the Speed of Light, (4ed), McGraw-Hill, New york.

Gremler, D. D., and Brown, S. W. (1997). Towards a conceptual model of service loyalty. Paper presented at the AMA Winter Educators Conference, Chicago.

Grönroos, C. (1990), "The marketing strategy continuum: Towards a marketing concept for the 1990s," Management Decision, Vol. 29, No. 1, pp. 7-13.

Grönroos, C. (1994), "From marketing mix to relationship marketing: Towards a paradigm shift in marketing," Management Decision, Vol. 32, No. 2, pp. 4-20.

Grönroos, C. (1995), "Relational Marketing: The Strategy Continuum," Journal of the Academy of Marketing Science, Vol. 23, No. 4, pp. 252-254.

Grönroos, C. (1996), "The value concept and relationship marketing," European Journal of Marketing, Vol. 30, No. 2, pp. 19-30.

Grönroos, C. (1997), "Value-driven Relational Marketing: from Products to Resources and Competencies," Journal of Marketing, Vol. 13, pp. 407-419.

Grönroos, C. (2001), Service management and marketing - a customer relationship management approach. 2nd edition, John Wiley and Sons, Ltd.

Grönroos, C. (2004), "The relationship marketing process: communication, interaction, dialogue, value," The Journal of Business and Industrial Marketing, Vol. 19, No. 2, pp. 99 - 113.

Grønholdt, L., A. Martensen and K. Kristensen (2000), "The Drivers of Customer Satisfaction and Loyalty: Cross- industry findings from Denmark," Total Quality Management**,** Vol. 11, No. (4/6), pp. 544-553.

Gruen, T. W. (1995), "The Outcome Set of Relationship Marketing in Consumer Markets," International Business Review, Vol. 4, No. 4, pp. 447- 469.

Gruner, K. E. and Homburg, C. (2000), "Does customer interaction enhance new

product success?," Journal of Business Research, Vol. 49, pp. 1-14.

Gummesson, E. (1994), "Making relationship marketing operational," International Journal of Science Management, Vol. 5, No. 5, pp. 5-20.

Gummesson, E. (1998), "Productivity, quality and relationship marketing in service operations," International Journal of Contemporary Hospitality Management, Vol. 10, No. 1, pp. 4-15.

Gummesson, E. (2002), "Practical value of adequate marketing management theory," European Journal of Marketing, Vol. 36, No. 3, pp. 325-349.

Guo, L., Xiao, J.J. and Tang, C. (2009), "Understanding the psychological process underlying customer satisfaction and retention in a relational service," Journal of Business Research, Vol. 62, No. 11, pp. 1152-1159.

Gupta, S. and Lehmann, D. R. (2003), "Customers as assets," Journal of Interactive Marketing, Vol. 17, No. 1, pp. 9-24.

Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1995), Multivariate Data Analysis with Readings (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998), Multivariate data analysis (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hair, J. F., Bush, R. B., and Ortinau, D. J. (2003), Marketing Research Within a Changing Information Environment. New York, NY: McGraw-Hill.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. and Tatham, R. J. (2006), Multivariate data analysis (6th ed.). Upper Saddle River, New Jersey: Prentice Hall.

Hallowell, R. (1996), "The relationships of customer satisfaction, customer loyalty, and profitability: an empirical study," International Journal of Service Industry Management, Vol. 7, No. 4, pp. 27-42.

Ham, C. L. (2003), "Analyzing the Value of Service Quality Management: Gaining Competitive Advantage," International Journal of Value-Based Management, Vol. 16, No. 2, pp. 131-152.

Harker, M. J. (1999), "Relationship marketing defined? An examination of current relationship marketing definitions," Marketing Intelligence and Planning, Vol. 17, No. 1, pp. 13-20.

Hart, C. W. L. (1995), "Mass customization: Conceptual underpinnings, opportunities," International Journal of Service Industry Management, Vol. 6, No. 2, pp. 36-45.

Hart, S., Smith, A., Spark, L. and Tzokas, N. (1999), "Are loyalty schemes a manifestation of relationship marketing?," Journal of Marketing Management, Vol. 15, No. 6, pp. 541-562.

Hartley, B. and Starkey, M. W. (1996), The Management of Sales and Customer Relations: Book of Reading, Intl Thomson Business Pr.

Hartline, M. D., Maxham, III J. G. and Mckee, D. O. (2000), "Corridors of Influence in the Dissemination of Customer-Oriented Strategy to Customer Contact Service Employees," Journal of Marketing, Vol. 64, April, pp. 35-50.

Harwood, T. G. and Garry, T. (2006), "Relationship marketing: Why bother?," Handbook of Business Strategy, pp. 107-111.

Heikkila, J. (2002), "From supply to demand chain management: efficiency and customer satisfaction, Journal of Operations Management, Vol. 20, pp. 747–767.

Hellier, P. K., Geursen, G. M., Carr, R. A. and Rickard, J. A. (2003), "Customer Repurchase Intention: A General Structural Equation Model," European Journal of Marketing, Vol. 37, No. 11/12, pp. 1762-1800.

Hinde, R. A. (1979), Toward understanding relationships. New York: Academic Press.

Ho, L. H. and Chuang, C. C. (2006), "The Application of Knowledge Management and Customer Relationship Management of ROC Government," Journal of American Academy of Business, Vol. 9, No. 2, pp. 63-71.

Hogan, J. E., Lemon, K. N. and Rust, R. T. (2002), "Customer equity management: Charting new directions for the future of marketing," Journal of Service Research, Vol. 5, No. 1, pp. 4-12.

Holmlund, M. and Tömroos, J. A. (1997), "What are relationships in business networks?," Management Decision, Vol. 35, No. 4, pp. 304-309.

Holmlund, M. (2004), "Analyzing business relationship and distinguishing different interaction levels," Industrial Marketing Management, Vol. 33, pp. 279-287.

Hollensen, S. (2010), Marketing Management: A Relationship Approach, (2/e), Financial Times Press.

Homburg, C., Nicole, K. and Wayne, D. H. (2005), "Do Satisfied Customers Really Pay More? A Study of the Relationship Between Customer Satisfaction and Willingness to Pay," Journal of Marketing, Vol. 69 (April), pp. 84–96.

Hofstede, G. (1991), Cultures and Organisations: Software of the Mind, McGraw-Hill, London.

Hoyle, R. H. and Panter, A. T. (1995), Writing about structural equation models. In R. H. Hoyle (ed.), Structural equation modeling: Concepts, issues, and applications (pp. 158-176). Thousand Oaks, CA: Sage.

Hsieh, Y. and Hiang, S. (2004), "A study of the impacts of service quality on relationship quality in search-experience-credence service," Total Quality Management, Vol. 15, No. 1, pp. 43-58.

Huang, E. Y. and Lin, C. Y. (2005), "Customer-oriented financial service personalization," Industrial Management and Data Systems, Vol. 105, No. 1, pp. 26-44.

Huber, F., Herrmann, A. and Morgan, R. E. (2001), "Gaining competitive advantage through customer value oriented management," The Journal of Consumer Marketing, Vol. 18, No. 1, pp. 41-53.

Hughes, A. M. (1994), "Strategic Database Marketing," Chicago. IL: Probus Publishing Company.

Hunt, S. D., Sparkman, R. D. and Wilcox, J. B. (1982), "Pretest in survey research: Issues and preliminary findings," Journal of Marketing Research, Vol. 19, No. 2, pp. 269-273.

Jackson, D. R. (1994), Strategic application of customer lifetime value in the direct marketing environment," Journal of Targeting Measurement and Analysis for Marketing, Vol. 3, No. 1, pp. 9-17.

Jacob, J. (1978), "Consumer research: A state of the art review," Journal of Marketing, Vol. 42, No. 2, pp. 87-96.

Jacoby, J. and Olson, J. C. (1977), Consumer Response to Price: an attitudinal, information processing perspective, in moving ahead with attitude research, Wind, Y. and Greenberg, M. (eds.), American Marketing Association, Chicago, pp. 73-86.

Jacoby, J. and Chestnut, R. W. (1978), Brand loyalty: Measurement and Management, New York: Wiley.

Jacopy, J. and Kyner, D. B. (1973), "Brand loyalty vs. repeat purchase behaviour," Journal of Marketing Research, Vol. 10, No. 1, pp. 1- 9.

Jain, A. K., Pinson, C., and Malhotra, N. K. (1987). Customer loyalty as a construct in the marketing of banking services. International Journal of Bank Marketing, Vo. 5, No. 3, pp. 49-72.

Jain, D. and Singh, S. S. (2002), "Customer lifetime value research in marketing: a review and future directions," Journal of Interactive Marketing, Vol. 16, No. 2, pp. 34-45.

Jain, R., Jain, S. and Dhar, U. (2003), "Measuring Customer Relationship Management," Journal of Services Research, Vol. 2, No. 2, pp. 97-109.

Jayachandran, S., Sharma, S., Kaufman, P. and Raman, P. (2005), "The Role of Relational Information Processes and Technology Use in Customer Relationship Management," Journal of Marketing, Vol. 69, No. 4, pp. 177-192.

Jones, T. O. and Sasser, W. E. (1995), "Why satisfied customers defect," Harvard Business Review, November-December, pp. 88-99.

Jones, E., Brown, S. P., Zoltners, A. A. and Weitz, B. A. (2005), "The changing environment of selling and sales management," Journal of Personal Selling and Sales Management, Vol. 25, No. 2, pp. 105-111.

Jones, E., Stevens, C. and Chonko, L. (2005), Selling ASAP: Art, science, agility,

performance, South-Western Mason, Ohio: Thomson.

Joo, Y. G. and Sohn, S. Y. (2006), "Structural equation model for effective CRM of digital content industry," Expert Systems with Applications, xxx, pp. 1-9.

Jöreskog, K., and Sörbom, D. (1981). LISERL V: Analysis of Linear Structural Relationships by the Method of maximum Likelihood. Chicago: National Education Resources.

Jöreskog, K. and Sörbom, D. (1982), "Recent development in structural equation modelling," Journal of Marketing Research, Vol. 19, No. 4, pp. 404-416.

Jöreskog, K., and Sörbom, D. (1996). LISREL 8: User's Reference Guide. Chicago: Scientific Software International.

Joshi, A. W. and Sharma, S. (2004), "Customer Knowledge Development: Antecedents and Impact on New Product Performance," Journal of Marketing, Vol. 68 (October), pp. 47-59.

Jutla, D., Craig, J. and Bodorik, P. (2001), **"**Enabling and Measuring Electronic Customer Relationship Management Readiness," Proceedings of the 34th Hawaii International Conference on System Sciences.

Jüttner, U., Christopher, M. and Baker, S. (2007), Demand Chain Management – Integrating Marketing and Supply Chain Management, Industrial Marketing Management, Vol. 36, No. 3, pp. 377-392.

Kahn, B. E., Kalwani, M. U. and Morrison, D. G. (1986), "Measuring variety seeking and reinforcement behaviours using panel data," Journal of Marketing Research, Vol. 23, No. 2, pp. 89-100.

Kahn, B. E. (1998), "Dynamic relationships with customers: High-variety strategies," Academy of marketing Science, Vol. 26, No. 1, pp. 45-53.

Kaplan, R. S. and Norton, D. P. (2001), The strategy-focused organization: how balanced scorecard companies thrive in the new business environment, Harvard Business Publishing Corporation, American.

Kaplan, R. S. and Norton, D. P. (2004), Strategy maps: converting intangible assets into tangible outcomes, Harvard Business Publishing Corporation, American.

Karakostas, B., Kardaras, D. and Papathanassiou, E. (2005), "The state of CRM adoption by the financial services in the UK: an empirical investigation," Information and Management, Vol. 42, pp. 853-863.

Kim, J., Suh, E. and Hwang, H. (2003), "A Model for Evaluating the Effectiveness of CRM Using the Balanced Scorecard," Journal of Interactive Marketing, Vol. 17, No. 2, pp. 5-19.

Kim, W. G. and Cha, Y. (2002), "Antecedents and consequences of relationship quality in hotel industry," Hospitality Management, Vol. 217, No. 21, pp. 321-338.

Kline, R. B. (2005). Principles and Practice of Structural Equation Modelling (2nd ed.). New York: The Guilford Press.

Kotha, S. (1995), "Mass customization: implementing the emerging paradigm for competitive advantage," Strategic Management Journal, Vol. 16, pp. 21-42.

Kotler, P. (1997), Marketing Management: Analysis, Planning, Implementation, and Control, 9th ed., New Jersey: David Borkowsky.

Kotler, P., Armstrong, G., Wong, V. and Saunders, J. A. (2008), Principles of Marketing, Upper Saddle River, NJ: Pearson Education.

Kong, J. S. (2005), "Financial Outlook Monthly," Financial Supervisory Commission, Executive Yuan, R.O.C., June.

Körner, V. and Zimmmermann, H. D. (2000), "Management of Customer Relationship in Business Media - The Case of the Financial Industry," Proceedings of the 33th Hawaii International Conference on System Sciences, pp. 1-10.

Krasnikov, A., Jayachandran, S. and Kumar, V. (2009), "The Impact of Customer Relationship Managemen Implementation on Cost and Profit Efficiencies: Evidence from the U.S. Commercial Banking Industry," Journal of Marketing, Vol. 73 (November), pp. 61–76.

Kristensen, K. (1997), "Monitoring Beyond the Bottom Line: productivity, time, relations and quality," TMI World Congress.

Kristensen, K., Juhl, H. J. and Østergaard, P. (2001), "Customer satisfaction: some results for European Retailing," Total Quality Management, Vol. 12, No. 7/8, pp. 890-897.

Kumar, V. and Reinartz, W. J. (2006), Customer Relationship Management: A Databased Approach, Hoboken, N.J.: Wiley.

Kuo, T. H. (2011), "The Antecedents of Customer Relationship in e-Banking Industry," The Journal of Computer Information Systems, Vol. 51, No. 3, pp. 57-66.

La, K. V. and Kandampully, F. (2004), "Market oriented learning and customer value enhancement through service recovery management," Managing Service Quality, Vol. 14, No. 5, pp. 390-401.

Lancioni, R., Smith, M. and Stein, A. (2009), "Industrial Organization and Customer Relationship Management: The Impact on Customer Service Orientation in B-to-B Markets," Journal of Management & Public Policy, Vol. 1, No. 1, pp. 57- 88.

Lanning, M. J. and Michaels, E. G. (1988), A business is a value delivery system, staff paper, McKinsey and Company.

Lanning, M. J. (1998), Delivering profitable value, Cambridge, MA: Perseus Publishing.

Lau, S. R. M. (1995), "Mass customization: the next industrial revolution," Industrial

Management, Vol. 37, No. 5, pp. 18-19.

Lee, C. H., Huang, S. Y., Barnes, F. B. and Kao, Li. (2010), "Business performance and customer relationship management: The effect of IT, organisational contingency and business process on Taiwanese manufacturers," Total Quality Management, Vol. 21, No. 1, pp. 43-65.

Lee, Y. S. (2002), "Financial Policy Bimonthly," The Bankers Association of the Republic of China.

Leigh, T. W. and Tanner Jr., J. F. (2004), "Introduction: JPSSM special issue on customer relationship management," Journal of Personal Selling and Sales Management, Vol. 24, pp. 259-262.

Leonard, D. (1995), Wellsprings of Knowledge: Building and Sustaining the Source of Innovation, Boston: Harvard Business School Press.

Lesser, E., Mundel, D. and Wiecha, C. (2000), "Managing customer knowledge," The Journal of Business Strategy, Vol. 21, No. 6, pp. 34-37.

Leverin, A. and Liljander, V. (2006), "Does relationship marketing improve customer relationship satisfaction and loyalty?," International Journal of Bank Marketing, Vol. 24, No. 4, pp. 232-251.

Li, T. and Calantone, R. J. (1998), "The impact of market knowledge competence on new product advantage: Conceptualization and Empirical Examination," Journal of Marketing, Vol. 62, No. 4, pp. 13-29.

Liang, C. J. and Wang, W. H. (2005), "Integrative research into the financial service industry in Taiwan: relationship bonding tactics, relationship quality and behavioural loyalty," Journal of Financial Service Marketing, Vol. 10, No. 1, pp. 65-83.

Lin, J. Y. (2006), MANOVA: the operation and application of SPSS, Taipei: Best Wise Publishing.

Lin, N. H., Tseng, W. C., Hung, Y. C. and Yen, D. C. (2009), "Making customer relationship management work: evidence from the banking industry in Taiwan," The Service Industries Journal, Vol. 29, No. 9, pp. 1183-1197.

Lindgreen, A. and Wynstra, F. (2005), "Value in business markets: What do we know? Where are we going?," Industrial Marketing Management, Vol. 34, pp. 732-748.

Lin, R. J., Chen, R. H. and Chiu, K. K. S. (2010), "Customer relationship management and innovation capability: an empirical study," Industrial Management and Data System, Vol. 110, No. 1, pp. 111-133.

Lin, J. and Si, S. X. (2010), "Can guanxi be a problem? Contexts, ties, and some unfavorable consequences of social capital in China," Asia Pacific Journal of Management, Vol. 27, pp. 561-581.

Liu, H. Y. (2007), "Development of a Framework for Customer Relationship Management in the Banking Industry," International Journal of Management, Vol. 24, No. 1, pp. 15-32.

Liu, F. and You, Y. (2011), "Study and Explores on CRM Based on the Supply Chain Integration," Management Science and Engineering, Vol. 5, No. 1, pp.1-9.

Loehlin, J. C. (1992), Latent variable model: An introduction to factor, path, and structural analysis (2nd). Hillsdale, NJ: Lawrence Erlbaum.

Lomax, R. (1989), Covariance structure analysis: Extensions and development, In B. Thompson (ed.), Advance in social science methodology, Vol. 1, pp. 171-204.

Lovelock, C. H. and Wirtz, J. (2004), Service Marketing: People, Technology, Strategy, Prentice Hall, Upper Saddle River NJ.

Lu, D. Y. (2006), "Financial Outlook Monthly," Financial Supervisory Commission, Executive Yuan, R.O.C., May.

Lusch, R. F., Vargo, S. L. and Tanniru, M. (2010), "Service, value network and learning," Journal of the Academy of Marketing Science, Vol. 38, No. 1, pp. 19-31.

Mack, O. M., Mayo, C. and A. Khare, (2005), "A Strategic for Successful CRM: European Perspective," Problems and Perspectives in Management, Vol. 2, pp. 98-106.

Maidique, M. A. and Zirger, B. J. (1985), "The new product learning cycle," research policy, Vol. 14 (December), pp. 299-313.

Malhotra, N. K., Agarwal, J. and Peterson, M. (1996), "Methodological issues in crossculture marketing research: A state-of-the-art review," International Marketing Review, Vol. 13, No. 5, pp. 7-43.

Malhotra, N. K. (2003), Marketing Research: An Applied Orientation (2nd European ed.), Harlow: FT Prentice Hall.

Malhotra, N. K. (2007), Marketing Research: An Applied Orientation (5th ed.), Upper Saddle River, New Jersey: Pearson Prentice Hall.

Malthouse, E. C. and Blattberg, R. C. (2004), "Can We Predict Customer Lifetime Value," Journal of Interactive Marketing, Vol. 19, No. 1, pp. 2-16.

Martin, R. (2010), "The Age of Customer Capitalism," Harvard Business Review, Vol. 88, No. 1/2, pp. 58-65.

Massey, A. P., Montoya-Weiss, M. M. and Holcom, K. (2001), "Re-engineering the customer relationship: leveraging knowledge assets at IBM," Decision Support Systems, Vol. 32, pp. 155-170.

Matsuno, K., Mentzer, J. T. and özsomer, A. (2002), "The Effects of Entrepreneurial Proclivity and Market Orientation on Business Performance," Journal of Marketing,

Vol. 66, pp. 18-32.

Mazhari, M. Y., Madahi1, A. and Sukati, I. (2012), "The Effect of Relationship Marketing on Costumers' Loyalty in Iran Sanandaj City Banks," International Journal of Business and Management, Vol. 7, No. 15, pp. 81-87.

McCarthy, L. P. (2004), "Special issue editorial: the what, why and how of mass customization," Production Planning and Control, Vol. 15, No. 4, pp. 347-351.

McCelland, S. (1994), "Training needs assessment data-gathering methods: Part 4, survey questionnaire," Journal of European Industrial Training, Vol. 18, No. 5, pp. 22-26.

McDonald, M. A. (1996), **"**Service quality and customer lifetime value in professional sport franchises," Ph.D., University of Massachusetts Amherst.

McDougall, G. H. G. and Levesque, T. (2000), "Customer Satisfaction with Services: Putting Perceived Value to Equation," Journal of Services Marketing, Vol. 14, No. 5, pp. 392-410.

Mithas, S. M., Krishnan, S. and Fornell,C. (2005), "Why Do Customer Relationship Management Applications Affect Customer Satisfaction?," Journal of Marketing, Vol. 69, No. 4, pp. 201-209.

Minna, R. and Aino, H. (2005), "Customer Knowledge Management Competence: Towards a Theoretical Framework," Proceedings of the 38th Hawaii International Conference on System Science, pp. 1-9.

Monroe, K. B. (1990), Pricing: making profitable decision. (2nd ed.), New York: McGraw-Hill Book company.

Morgan, R. M. and Hunt, S. D. (1994), "The commitment–trust theory of relationship marketing," Journal of Marketing, Vol. 58, pp. 20-38.

Möller, K. and Halinen, A. (2000), "Relationship Marketing Theory: Its Roots and Direction," Journal of Marketing Management, Vol. 16, pp. 29-54.

Mulhern, F. J. (1999), "Customer profitability analysis: Measurement, Concentration, and Research Direction," Journal of Interactive Marketing, Vol. 13, No. 1, pp. 25-39.

Mueller, F. (2010), Sales Management Control Strategies in Banking, Springer.

Mueller, R. O. (1997), Structural Equation Modeling: Back to basics. Structural Equation Modeling, Vol. 4, pp. 353-369.

Nasution, H. N. and Mavondo, F. T. (2007), "Organisational capabilities: antecedents and implications for customer value," European Journal of Marketing, Vol. 42, No. (3/4), pp. 477-501.

Nejatian, H., Sentosa, I. and Piaralal, S. K. (2011), "The Influence of Customer Knowledge on CRM Performance of Malaysian ICT Companies: A Structural

Equation Modeling Approach," International Journal of Business and Management, Vol. 6, No. 7, pp. 181-198.

Netemeyer, R. G., Bearden, W. O. and Sharma, S. (2003), Scaling procedures: issues and applications, Thousand Oaks, California: Sage Publications.

Nevin, J. R. (1995), "Relationship marketing and distribution channels: Exploring fundamental issues," Journal of The Academy of Marketing Science, Vol. 23, No. 4, pp. 327-334.

Nunnally, J. C. (1978), Psychometric Theory (2nd ed.). New York: McGraw-Hill.

Nunnally, J. C. and Bernstein, I. H. (1994), Psychometric Theory (3rd ed.). New York: McGraw-Hill.

Neuman, W. L. (1997), Social Research Methods: Qualitative and Quantitative Approaches. Boston, MA: Allyn and Bacon.

Oliver, R. L. (1981), "Measurement and Evaluation of Satisfaction Processes in Retail Setting," Journal of Retailing, Vol. 57, pp. 25-48.

Oliver, R. L. (1999), "Whence consumer loyalty?," Journal of Marketing, Vol. 63, pp. 33-44.

O'Mally, L. and Tynan, C. (2000), "Relationship marketing in consumer markets; rhetoric or reality?," European Journal of Marketing, Vol. 34, No. 7, pp. 797-815.

Ö sterle, H. (2001), Enterprise in the Information Age, in: Ö sterle, H., Fleisch, E., Alt, R. (Eds.), Business Networking: Shaping Collaboration Between Enterprises, Springer, Berlin, pp. 17-54.

Palmatier, P., Dant, R. P., Grewal, D. and Evans, K. R. (2006), "Factors influencing the effectiveness of relationship marketing: A meta-analysis," Journal of Marketing, Vol. 70 (October), pp. 136-156.

Palmatier, R. W., Jarvis, C. B. Bechkoff, J. R. and Kardes, F. R. (2009), "The Role of Customer Gratitude in Relationship Marketing," Journal of Marketing, Vol. 73 (September), pp. 1–18.

Palmer, A. J. (1994), "Relationship marketing: Back to basic?," Journal of Marketing Management, Vol. 10, No. 7, pp. 571-578.

Palmer, A. J. (1996), "Relationship marketing: a universal paradigm or management fad?," The Learning Organization, Vol. 3, No. 3, pp. 18-25.

Palmer, A. J. (2000), Principles of Marketing, New York, N. Y: Oxford University Press.

Parasuraman, A. (1998), "Customer service in business-to-business markets: an agenda for research," The Journal of Business and Industrial Marketing**,** Vol. 13, No. 4/5, pp. 309-322.

Park, C. H. and Kim, Y. G. (2003), "A framework of dynamic CRM: linking marketing with information strategy," Business Process Management Journal, Vol. 9, No. 5, pp.

652-671.

Parvatiyar, A. and Sheth, J. N. (2000), "The domain and conceptual foundations of relationship marketing," In , J. N. Sheth and A. Parvatiyar (Eds), Hand book of Relationship Marketing (pp. 3-38). Thousand Oaks, CA: Sage Publications.

Parvatiyar, A. and Sheth, J. N. (2001), "Customer Relationship Management: Emerging Practice, Process, and Discipline," Journal of Economic and Social Research, Vol. 3, No. 2, pp. 1-34.

Pathirage, C. P., Amaratunga, D. G. and Haigh, R. P. (2007), "Tacit knowledge and organisational performance: construction industry perspective," Journal of Knowledge Management, Vol. 11, No. 1, pp. 115-126.

Patterson, P. and Spreng, G. (1997), "Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: an empirical examination," International Journal of Service Industry Management, Vol. 8, No. 5, pp. 414-434.

Pavicic, J., Alfirevic, N. and Znidar, K. (2011), "Customer Knowledge Management Toward Social CRM," International Journal of Management Cases, pp. 203-209.

Payne, A. (1995), Advances in Relationship Marketing, Kogan Page, London.

Payne, A. and Holt, S. (2001), "Diagnosing Customer Value: Integrating the Value Process and Relationship Marketing," British Journal of Management, Vol. 12, pp. 159-182.

Payne, A. and Frow, P. (2004), "The role of multichannel integration in customer relationship management," Industrial Marketing Management, Vol. 33, pp. 527-538.

Payne, A. and Frow, P. (2005), "A strategic Framework for Customer Relationship Management," Journal of Marketing, Vol. 69, No. 4, pp. 167-176.

Peelen, E. (2005). Customer relationship management. Harlow : FT/Prentice Hall.

Peppard, J. (2000), "Customer Relationship Management (CRM) in Financial Services," European Management Journal, Vol. 18, No. 3, pp. 312-327.

Peppers, D. and Rogers, M. (1993), The One To One Future: Building Relationships One Customer at a time, Doubleday, New York.

Peppers, D., Rogers, M. and Dorf, R. (1999), "Is Your Company Ready for One-to-One Marketing," Harvard Business Review, Jan-Feb, pp. 151-160.

Peppers, D. and Rogers, M. (2011), Managing customer relationships: a strategic framework, John Wiley and Sons.

Peterson, R. A. (1995), "Relationship marketing and the consumer," Journal of the Academy of Marketing Science, Vol. 23, No. 4, pp. 278-281.

Petrick, J. F. (2001), "Development of a multi-dimensional scale for measuring the perceived value of a service," Journal of Leisure Research, Vol. 34, No. 2, pp.

119-134.

Pine, B. J. Π (1993), Mass customizing products and services, Planning Review, Vol. 21, No. 4, pp. 6-13.

Pine, B. J. Π, Peppers, D. and Rogers, M. (1993), "Do you want to keep your customers forever?," Harvard Business Review, Vol. 72, No. 3, pp. 103-114.

Plakoyiannaki, E. and Tzokas, N. (2002), "Customer relationship management: A capability portfolio perspective," Journal of Database Marketing, Vol. 9, No. 3, pp. 228-237.

Plessis, M. and Boon, J. A. (2004), "Knowledge management in eBusiness and customer relationship management: South African case study findings," International Journal Information Management, Vol. 24, No. 1, pp. 73-86.

Porter, M. E. and Millar, V. E. (1985), "How Information Gives You Competitive Advantage," Harvard Business Review, Vol. 64, No. 4, pp. 149-160.

Poujol, E. J. and Tanner, Jr, J. F. (2009), "The Impact of Contests on Salespeople's Customer Orientation: An Application of Tournament Theory," Journal of Personal Selling & Sales Management, Vol. XXX, No. 1, pp. 33-46.

Prus, A. and Randall, B. D. (1995), "Understanding your customers," Marketing Tools, July-August, pp. 10-13.

Punch, K. F. (1998), Introduction to Social Research: Quantitative and Qualitative Approaches, London: Sage.

Quintas, P., Lefrere, P. and Jones, G. (1997), "Knowledge Management: a Strategic Agenda," Long Range Planning, Vol. 30, No. 3, pp. 385-391.

Rao, H. (1994), "The social construction of reputation: certification contests, legitimation, and the survival of organisations in the American automobile industry: 1895 – 1912," Strategic Management Journal, Vol. 15, pp. 29-44.

Ravald, A. and Grönroos, C. (1996), "The value concept and relationship marketing," European Journal of Marketing, Vol. 30, pp. 19-30.

Reichheld, F. F. and Sasser, W. E. (1990), "Zero Defections: Quality Comes to Service," Harvard Business Review, Vol. 68, pp. 105-111.

Reichheld, F. F. and Teal, T. (1996), "The Loyalty Effect: The Hidden Force behind Growth, Profits, and Lasting Value," Harvard Business School Press, Boston, MA.

Reichheld, F. F. (1996), "Learning from Customer Defections," HBR, March-April, pp. 56-69.

Reichheld, F. F., Markey Jr, R. G. and Hopton, C. (2000), "The loyalty effect - the relationship between loyalty and profits," European Business Journal, Vol. 12, No. 3, pp.134-139.

Reimann, M., Schilke, O. and Thomas, J. S. (2010), "Customer relationship

management and firm performance: the mediating role of business strategy," Academy of Marketing Science, Vol. 38, pp. 326-346.

Reinartz, W. J. and Kumar, V. (2000), "On the Profitability of Long-Life Customers in a Noncontractual Setting: An Empirical Investigation and Implications for Marketing," Journal of Marketing, Vol. 64, October, pp. 17-35.

Reinartz, W., Krafft, M. and Hoyer, W. D. (2004), "The Customer Relationship Management Process: Its Measurement and Impact on Performance," Journal of Marketing Research, Vol. 41, No. 3, pp. 293-305.

Reynolds, N. and Diamantopoulos, A. (1998), "The effect of pretest method on error detection rates," European Journal of Marketing, Vol. 32, No. (5/6), pp. 480-498.

Richards, K. A. and Jones, E. (2008), "Customer relationship management: Finding value drivers," Industrial Marketing Management, Vol. 37, pp. 120-130.

Rigdon, E. (1995), "A necessary an sufficient identification rule for structural equation models estimated," Multivariate Behavioral Research, Vol. 30, pp. 359-383.

Riley, M., Niininen, O., Szivas, E. E. and willis, T. (2001), "The case for process approaches in loyalty research in tourism," International Journal of Tourism Research, Vol. 3, No. 1, pp. 23-32.

Roberts, K., Varki, S. and Brodie, R. (2003), "Measuring the quality of relationships in consumer services: an empirical study," European Journal of Marketing, Vol. 37, No. 1/2, pp. 169-196.

Roig, J. C. F., Garcia, J. S., Tena, M. A. M. and Monzonis, J. L. (2006), "Customer perceived value in banking services," International Journal of Bank Marketing, Vol. 24, No. 5, pp. 266-283.

Ross. D. F. (2005), E-CRM from a Supply Chain Management Perspective, Information Systems Management, Vol. 22, No. 1, pp. 37-44.

Rowley, F. E. (2002), "Reflections on customer knowledge management in e-business," Qualitative Market Research: An International Journal, Vol. 5, No. 4, pp. 268-280.

Rust, R. T., Moorman, C. and Bhalla, G. (2010), "Rethinking Marketing," Harvard Business Review, Vol. 88 No. 1/2, pp. 94-101.

Ryals, L. and Payne, A. (2001), "Customer relationship management in financial services: towards information-enabled relationship marketing," Journal of Strategic Marketing, Vol. 9, pp. 3-27.

Ryals, L. and Payne, A. (2001), "Cross-Functional Issues in the Implementation of Relationship Marketing Through Customer Relationship Management," European Management Journal, Vol. 19, No. 5, pp. 534-542.

Salciuviene, L., Auruskeviciene, V. and Lydeka, Z. (2005), "An assessment of various approaches for cross-cultural consumer research," Problems and Perspectives in

Management, Vol. 3, pp. 147-159.

Salomann, H., Dous, M., Kolbe, L. and Brenner, W. (2005), "Rejuvenating Customer Management: How to Make Knowledge For, From, About Customers Work," European Management Journal, Vol. 23, No. 4, pp. 392-403.

Sánchez, J., Callarisa, L., Rodriguez, R. M. and Moliner, M. A. (2006), "Perceived value of the purchase of a tourism product," Tourism Management, Vol. 27, pp. 394-409.

Sekaran, U. (1992), Research Methods for Business: A Skill -Building Approach (2nd ed.). New York; Chichester: Wiley.

Sekaran, U. (2000), Research Methods for Business: A Skill -Building Approach (3rd ed.). New York; Chichester: Wiley.

Selnes, F. (1993), "An Examination of the Effect of Product Performance on Brand Reputation, Satisfaction and Loyalty," European Journal of Marketing, Vol. 27, No. 9, pp. 19-35.

Shah, D., Rust, R. T., Parasuraman, A., Staelin, R. and Day, G. S. (2006),"The Path to Customer Centricity," Journal of Service Research, Vol. 9, No. 2, pp. 113-124.

Shani D. and Chalasani, S. (1992), "Exploiting Niches Using Relationship Marketing," The Journal of consumer Marketing, Vol. 9, No. 3, pp. 33-42.

Sheth, J. N., Newman, B. I. and Gross, B. L. (1991), "Why We Buy What We Buy: A Theory of Consumption Values," Journal of Business Research, Vol. 22, pp. 159-170.

Sheth, J. N. and Parvatiyar, A. (1995), "The evaluation of relationship marketing," International Business Review, Vol. 4, No. 4, pp. 397-418.

Sheth, J. N. and Sisodia, R. S. (1999), "Revisiting Marketing's Lawlike Generalizations," Journal of the Academy of Marketing Science, Vol. 27, No. 1, pp. 71-87.

Shi, J. and L. Yip (2007), "Driving Innovation and Improving Employee Capability: The Effects of Customer Knowledge Sharing on CRM," The Business Review, Cambridge, Vol. 7, No. 1, pp. 107-112.

Shoemaker, S. and Lewis, R. C. (1999), "customer loyalty: the future of hospitality marketing," International Journal of Hospitality Management, Vol. 18, No. 4, pp. 345-370.

Shugan, S. M. (2005), "Brand loyalty program: are they shams," Marketing Science, Vol. 24, No. 2, pp. 185-193.

Sigala, M. (2005), "Integrating customer relationship management in hotel operations: managerial and operational implications," Hospitality Management, Vol. 24, pp. 391-413.

Sin, L. Y. M., Tse, A. C. B. and Yim, F. H. K. (2005), "CRM: conceptualization and scale development," European Journal of Marketing, Vol. 39, No. 11/12, pp. 1264-1290.

Slater, S. F. and Narver, J. C. (1994), "Market Orientation, Customer Value, and Superior Performance," Business Horizons, March-April, pp. 22-28.

Slater S. F. (1997), "Developing a Customer Value-Based Theory of the Firm," Journal of the Academic of Marketing Science, Vol. 25, No. 2, pp. 162-167.

Slater, S. F. and Narver, J. C. (2000), "Intelligence Generation and Superior Customer Value," Journal of the Academy of Marketing Science, Vol. 28, No. 1, pp. 120-127.

So, S. L. M. and Speece, M. M. (2000), "Perceptions of relationship marketing among account managers of commercial banks in a Chinese environment, " International Journal of Bank Marketing, Vol. 18, No. 7, pp. 315 - 327.

Sohrabi, B. and Khanlari, A. (2007), "Customer Lifetime Value Measurement Based on RFM Model," Iranian Accounting and Auditing Review, Vol. 14, No. 47, pp. 7-20.

Soliman, H. S. (2011), "Customer Relationship Management and Its Relationship to the Marketing Performance," International Journal of Business and Social Science, Vol. 2, No. 10, pp. 166-182.

Solomon, M. R., Surprenant, C., Czepiel, J. A. and Gutman, E. G. (1985), "A Role Theory Perspective on Dyadic Interactions: The Service Encounter," Journal of Marketing, Vol. 49, pp. 199-214.

Spekman, R. E. and Carraway, R. (2006), "Making the transition to collaborative buyer–seller relationships: An emerging framework," Industrial Marketing Management, Vol. 35, No. 1, pp. 10-19.

Steenkamp. J. B. E. M. and van Trijp, H. C. M. (1991), The use of LISREL in validating marketing constructs," International Journal of Research in Marketing, Vol. 8, No. 4, pp. 283-299.

Stefanou, C. J., Sarmaniotis, C. and Stafyla, A. (2003), "CRM and customer-centric knowledge management: an empirical research," Business Process Management Journal, Vol. 9, No. 5, pp. 617-634.

Storbacka, K., Strandvik, T. and Grönroos, C. (1994), Managing Customer Relationship for Profit: The Dynamics of Relationship Quality," Industrial Journal of Service Industry Management, Vol. 5, No. 5, pp. 21-38.

Stringfellow, A., Nie, W. and Bowen, D. E. (2004), "CRM: Profiting from understanding customer needs," Business Horizons, Vol. 47, No. 5, pp. 45-52.

Su, C. T., Chen, Y. H. and Shal, D. Y. (2006), "Linking innovative product development with customer knowledge: a data-mining approach," Technovation, Vol. 26, pp. 784-795.

Sweeney, J. C. and Soutar, G. N. (2001), “Consumer perceived value: The development of a multiple item scale,” Journal of Retailing, Vol. 77, pp. 203-220.

Swift, R. S. (2001), Accelerating Customer Relationships; using CRM and relationship technologies, Prentice-Hall, Inc.

Smith, J. and Barclay, D. W. (1997), “The effects of organizational differences and trust on the effectiveness of selling partner relationships,” Journal of Marketing, Vol, 61, No. 1, pp. 3-21.

Tabachnick, B. G. and Fidell, L. S. (2001), Using Multivariate Statistics (4th ed.). Boston: Allyn and Bacon.

Tanaka, J. S. (1987), “How big is big enough?: Sample size and goodness of fit in structural equation models with latent variables,” Child development, Vol. 58, No. 1, pp. 134-146.

Tanner, J. F., Ahearne, M., Leigh, T. W., Mason, C. H. and Moncrief, W. (2005), “CRM in sales-intensive organizations: A review and future directions,” Journal of Personal Selling and Sales Management, Vol. 25, pp. 171-182.

Teece, D. J. (1998), “Research directions for knowledge management,” California Management Review, Vol. 40, No. 3, pp. 289-292.

Temple, B. (1997), “Watch your tongue: Issues in translation and cross-cultural research,” Sociology, Vol. 31, No. 3, pp. 607-618.

Teo T. S. H., Devadoss, P. and Pan, S. L. (2006), “Towards a holistic perspective of customer relationship management implementation: A case study of the Housing and Development Board, Singapore,” Decision Support System, Vol, 42, pp. 1613-1627.

Thomas, J. S., Blattberg, R. C. and Fox, E. J. (2004), “Recapturing lost customers,” Journal of Marketing Research, XLI, pp. 31-45.

Too, H. Y., Souchon, A. L. and Thirkell, P. C. (2001), “Relationship marketing and customer loyalty in a retail setting: A dyadic exploration,” Journal of Marketing Management, Vol. 17, pp. 287-319.

Tu, Q., Vonderembse, M. A. and Raug-Nathan, T. S. (2001), “The impact of time-based manufacturing practices on mass customization and value to customer,” Journal of Operations Management, Vol. 19, pp. 201-217.

Tull, D. S. and Hawkins, D. I. (1990), Marketing Research: Meaning, Measurement, and Method: A text with Cases (5th ed.). New York: Macmillan.

Tzokas, N. and Saren, M. (1999), “Value Transformation in Relationship Marketing. Australasian Marketing Journal, Vol. 7, No. 1, pp. 52-62.

Ulaga, W. and Chacour, S. (2001), Measuring Customer-perceived Value in Business Markets, Industrial Marketing Management, Vol. 30, pp. 525-540.

Ulaga, W. and Eggert, A. (2006), "Relationship value and relationship quality - Broadening the nomological network of business-to-business relationships," European Journal of Marketing, Vol. 40, pp. 311-327.

Uncles, M. D., Dowling, G. R. and Hammond, K. (2003), Customer loyalty and customer loyalty programs," Journal of Consumer Marketing, Vol. 20, No. 4, pp. 294-316.

Vargo, S. L. and Lusch, R. F. (2004), "Evolving to a New Dominant Logic for Marketing," Journal of Marketing, Vol. 68, No. 1, pp. 1-17.

Vargo, S. L. and Lusch, R. F. (2008), "Service-dominant Logic: continuing the evolution," Journal of the Academy of Marketing Science, Vol. 36, No. 1, pp. 1-10.

Walters, D. and Lancaster, G. (2000), "Implementing value strategy through the value chain," Management Decision, Vol. 38, No. 3, pp. 160-178.

Wang, I. C., Huang, C. Y., Chen, Y. C. and Lin, Y. R.(2004), "The Influence of Customer Relationship Management Process on Management Performance," The International Journal of Organizational Innovation, pp. 40-50.

Wang, Y., Lo, H. P., Chi, R. and Yang, Y. (2004), "An integrated framework for customer value and customer-relationship-management performance: a customer-based perspective from China," Managing Service Quality, Vol. 14, No. 2/3, pp. 169-182.

Wang, W., Liang, C., and Wu, Y. (2006), "Relationship bonding tactics, relationship quality and customer behavioural loyalty-behavioural sequence in Taiwan's information service industry," Journal of Service Research, Vol. 6, No. 1, pp. 31-57.

Wang, G. P., Wang, J. L., Ma, X. Q and Qiu, R. G. (2010), "The Effect of Standardization and Customization on Service Satisfaction," Journal of Service Science, Vol. 2, pp.1-23.

Wang, Y. G. and Feng, H. (2012), "Customer relationship management capabilities: Measurement, antecedents and consequences," Management Decision, Vol. 50, No. 1, pp.115 -129.

Wayland, R. E. and Cole, P. M. (1997), "Customer Connections: New Strategies Growth," Harvard Business School Press.

Webster, F. E. Jr. (1992), "The Changing Role of Marketing in the Corporation," Journal of Marketing, Vol. 56, No. 4, pp. 1-17.

Webster, F. (1994), Market Driven Management of Marketing, John Wiley.

Wells, J. D., Fuerst, W. L. and Choobineh, J. (1999), "Managing information technology (IT) for one-to-one customer interaction," Information and Management, Vol. 35, No. 1, pp. 53-62.

Winer, R. S. (2001), "A Framework for Customer Relationship management,"

California Management Review, Vol. 43, No. 4, pp. 89-105.

Woodruff, R. B. (1997), "Customer Value: The Next Source for Competitive Advantage," Journal of the Academy of Marketing Science, Vol. 5, pp. 139-153.

Woodcock, N., Starkey, M. W. and Stone, M. (2000), The customer management scorecard: state of the nation - a strategic framework for benchmarking performance against best practice, London, Business Intelligence.

Woodcock, N., Green, A. and Starkey, M. W. (2011), "Social CRM as a business strategy," Journal of Database Marketing & Customer Strategy Management, Vol. 18, pp. 50-64.

Woo, K. S. and Ennew, C. T. (2004), "Business-to-business relationship quality-An IMP interaction-based conceptualization and measurement," European Journal of Marketing, Vol. 38, No. 9/10, pp. 1252-1271.

Wortzel, L. H. (1987), "Retailing Strategies for Today's Mature Marketplace," The Journal of Business Strategy, pp. 45-56.

Wright, L. T. and Stone, M. (2010), "Customer Relationship Management and Marketing Insights," in Moutinho, L. and Southern, G., (eds), Strategic Marketing Management: A Business Process Approach, USA: Cengage Learning EMEA, Chapter 9, pp. 257-270.

Wyner, G. A. (1999), "Customer Profitability," Marking Management, Vol. 8, No. 4, pp. 8-9.

Xu, Y., Yen, D. C., Lin, B. and Chou, D. C. (2002), "Adopting customer relationship management technology," Industrial Management and Data System, Vol. 102, No. 8, pp. 442-452.

Xu, M. and Walton, J. (2005), "Gaining customer knowledge through analytical CRM," Industrial Management + Data Systems, Vol. 105, No. 7, pp. 955-971.

Yao, H. I. and Khong, K. W. (2011), "Effectiveness of Customer Relationship Management on Customer Satisfaction in the Commercial Banks of Taiwan," Contemporary Management Research, Vol. 7, No. 2, pp. 105-116.

Yao, H. I. and Khong, K. W. (2012), "Customer Relationship Management: Is It Still Relevant to Commercial Banks in Taiwan," International Journal of Business and Management, Vol. 7, No. 1, pp. 151-160.

Yim, F. H. K., Anderson, R. E. and Swaminathan, S. (2004), "Customer Relationship Management: Its Dimensions and Effect on Customer Outcomes," Journal of Personal Selling and Sales Management, Vol. 24, No. 4, pp. 263-278.

Zablah, A. R., Bellenger, D. N. and Johnston, W. J. (2004), "An evaluation of divergent perspectives on customer relationship management: Towards a common understanding of an emerging phenomenon," Industrial Marketing Management, Vol.

33, pp. 475-489.

Zatalman, G. and Burger, P. C. (1975), Marketing Research-Fundamentals and Dynamics. Hinsdale, IL: The Dryden Press.

Zeithmal, V. A. (1988), "Customer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," Journal of Marketing, Vol. 52, pp. 2-22.

Zikmund, W. G. (1997), Business Research Method (5th ed.), Fort Worth; London: Dryden.

Zikmund, W. G. (2003), Business Research Method (7th ed.), Cincinnati, Ohio: South-Western.

Zineldin, M. (2000), "Beyond relationship marketing: technologicalship marketing," Marketing Intelligence and Planning, Vol. 18, No. 1, pp. 9-23.

Zineldin, M. (2006), "The royalty of loyalty: CRM, quality and retention," Journal of Consumer Marketing, Vol. 27, No. 7, pp. 430-437.

Appendix

Appendix A

1. Cover Letter to Managers Participating in Survey

Dear Manager,

Mr. Chien-Lin Chen is undertaking a research project entitled "**Conceptualising Customer Relationship Management and Its Impact on Customer Lifetime Value in the Taiwanese Banking Sector**" as a part of his PhD at Business School of De Montfort University. This project is under the supervision of Professor Len Tiu Wright and Mr. Michael Starkey. This research aims to develop an integrated model of customer relationship management and to investigate its impacts on customer lifetime value in the context of the organizational perceptions of banks in Taiwan. It is a significant project in that it will extend both customer relationship management and banks theory and practice. There are many benefits of this project to your organization. For instance, the researcher will provide managerially relevant information and recommendations on customer relationship management in the Taiwan banking industry. In addition, he will supply you with a summary report after finishing data analysis.

As a part of the research, your bank has been selected as the sample and the student researcher will give you a questionnaires. Your help is completely voluntary. Personal identification will not be included. All information provided will remain confidential and there are no foreseen risks to you. Please answer each question as honestly as you can, and note that there are not right or wrong answers. The questionnaire should not take more than 10 minute to complete. The survey data will be used for analysis only, and the final results will be used for academic research purpose.

Your participation in this research would be greatly appreciated. Any queries about your participation in this research may be directly communicated to the student researcher Mr. Chien-Lin Chen.

Thank you in anticipation for your assistance in this research.

Sincerely yours,

Supervisors: Professors Len Tiu Wright
Mr. Michael Starkey
Student Researcher: Mr. Chien-Lin Chen

Contact address: Department of Information Management, ChienKuo Technology University
Tel: 04-7111111- 3601
Email: casper@ctu.edu.tw

2. Cover Letter to Customers Participating in Survey

Dear Customers,

I am undertaking a research project entitled "**Conceptualising Customer Relationship Management and Its Impact on Customer Lifetime Value in the Taiwanese Banking Sector**" as a part of his PhD at Business School of De Montfort University. This project is under the supervision of Professor Len Tiu Wright and Mr. Michael Starkey. This research aims to develop an integrated model of customer relationship management in the context of customers' perceptions of banks. It is a significant project in that it will extend both customer relationship management and banks theory and practice.

On the following pages, you will be presented with a series of questions about your relationship with this bank. Your help is completely voluntary and personal identification will not be included. All information provided will remain confidential and there are no foreseen risks to you. Please answer each question as honestly as you can, and note that there are not right or wrong answers. The questionnaire should not take more than 5 minute to complete. The survey data will be used for analysis only, and the final results will be used for academic research purpose.

Your participation in this research would be greatly appreciated. Any queries about your participation in this research may be directly communicated to me.

Thank you in anticipation for your assistance in this research.

Sincerely yours,

Supervisors: Professors Len Tiu Wright
Mr. Michael Starkey
Researcher: Mr. Chien-Lin Chen

Contact address: Department of Information Management, ChienKuo Technology University
Tel: 04-7111111- 3601
Email: casper@ctu.edu.tw

Appendix B

1. Questionnaire for managers (English Version)

Part 1: Here are some questions about the key constructs of CRM (customer knowledge, customer knowledge management capability, customer interaction, and customization), customer value, customer satisfaction, customer loyalty and customer lifetime value within your organization.

Q1. Activities to customer knowledge

Here are some questions about your perceptions of your organization. Please rate how much you perceive with each statement by ticking the box.

Statement	Very Low ← → Very High				
	1	2	3	4	5
In my organization, the extent of the fulfilment of …..					
1. Knowledge about the diversity of products customers purchase with your bank	☐	☐	☐	☐	☐
2. Knowledge about customers' contribution to the bank's profit	☐	☐	☐	☐	☐
3. Knowledge about customers' purchasing patterns	☐	☐	☐	☐	☐
4. Knowledge about customers' purchasing frequency	☐	☐	☐	☐	☐
5. Knowledge about customers' purchasing preference	☐	☐	☐	☐	☐
6. Knowledge for customer about the bank's products and services	☐	☐	☐	☐	☐
7. Knowledge for customer about the bank's revenue, profit and policy	☐	☐	☐	☐	☐
8. Knowledge from customers' complaint	☐	☐	☐	☐	☐
9. Knowledge from customers' propositions	☐	☐	☐	☐	☐
10. Knowledge from customers' claims	☐	☐	☐	☐	☐

Q2. Activities to customer knowledge management capability

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ← → Strongly Agree				
	1	2	3	4	5
My organization ('s)...					
1. Structure facilitates the transfer of knowledge across structural boundaries	☐	☐	☐	☐	☐
2. Structure facilitates the discovery and the creation of new knowledge	☐	☐	☐	☐	☐
3. Structure promotes collective rather than individualistic behaviour	☐	☐	☐	☐	☐
My organization uses technology that allows . . .					
4. Employees to collaborate with other persons inside and outside the organisation	☐	☐	☐	☐	☐
5. It to search for new knowledge	☐	☐	☐	☐	☐
6. It to retrieve, use, and circulate knowledge	☐	☐	☐	☐	☐
In my organization . . .					
7. Employees understand the importance of customer knowledge to corporate success	☐	☐	☐	☐	☐

8.High levels of participation are expected in capturing and transferring customer knowledge	☐	☐	☐	☐	☐
9.Employees are encouraged to interact and discuss their work with people in other departments	☐	☐	☐	☐	☐
In my organization . . .					
10.Senior management clearly supports the role of knowledge management activities for the bank's success	☐	☐	☐	☐	☐
11.There is a standardized employee reward and evaluation systems for sharing knowledge	☐	☐	☐	☐	☐
My organization . . .					
12. Has capability for acquiring knowledge about our customers	☐	☐	☐	☐	☐
13. Has capability for acquiring knowledge about new products and services within our industry	☐	☐	☐	☐	☐
14. Has capability for converting customer knowledge into the design of new products/services	☐	☐	☐	☐	☐
15. Has capability for absorbing knowledge from both individuals and business partners into the organisation	☐	☐	☐	☐	☐
16. Has capability for transferring organizational knowledge to individuals	☐	☐	☐	☐	☐
17. Has capability for applying knowledge learned from tasks and experiences	☐	☐	☐	☐	☐
18. Has capability for using customer knowledge on organisational activities (i.e. work processes, development of new products and services, solving new problems and adjusting strategic direction)	☐	☐	☐	☐	☐
19. Has capability to protect knowledge from inappropriate use and theft inside and outside the organisation	☐	☐	☐	☐	☐
20. Knowledge that is restricted is clearly identified	☐	☐	☐	☐	☐

Q3. Activities to customer interaction

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	**Strongly Disagree** ◄——► **Strongly Agree**				
	1	2	3	4	5
My organization . . .					
1. Keeps constant dialogue with customers	☐	☐	☐	☐	☐
2. Uses information technology (e.g., Web sites, call centre and email) to strengthen multi-interaction channels with our customers	☐	☐	☐	☐	☐
3. Call our own bank as customer role and ask questions to test and understand our bank’s response	☐	☐	☐	☐	☐
4. Follows customer interaction paper trail through our organisation	☐	☐	☐	☐	☐
5. Use incoming call from customers as selling opportunities	☐	☐	☐	☐	☐
6. Compare major competitors’ customer service with ours	☐	☐	☐	☐	☐
7. Offers high value-added information for customers	☐	☐	☐	☐	☐

Q4. Activities to customization

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ◄——► Strongly Agree				
	1	2	3	4	5
My organization…					
1. Finds out actively what our customers need and want	☐	☐	☐	☐	☐
2. Asks our customers what banks can do differently to improve our products and services	☐	☐	☐	☐	☐
3. Customizes paperworks and processes to save individual customer's time and the bank's expense	☐	☐	☐	☐	☐
4. Uses customer knowledge to customize products and services	☐	☐	☐	☐	☐

Q5. Activities to customer value

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ◄——► Strongly Agree				
	1	2	3	4	5
Relative to major competitors,					
1. Your bank delivers services of the highest quality	☐	☐	☐	☐	☐
2. The quality of your bank's service is consistently high	☐	☐	☐	☐	☐
3. Your bank's service is very reliable	☐	☐	☐	☐	☐
4. Your bank's staff treat customers with great respect	☐	☐	☐	☐	☐
5. The price of your bank's service is considered reasonable	☐	☐	☐	☐	☐
6. Your bank's service fits customers' needs	☐	☐	☐	☐	☐
7. Your bank's service is considered prestigious	☐	☐	☐	☐	☐

Q6. Activities to customer satisfaction

Here are some questions about your perceptions of your organization. Please rate how much you perceive with each statement by ticking the box.

Statement	Very Low ◄——► Very High				
	1	2	3	4	5
In my organization…					
1. Innovative products and services is	☐	☐	☐	☐	☐
2. Convenience to the customer is	☐	☐	☐	☐	☐
3. The employees' team spirit is	☐	☐	☐	☐	☐
4. On-time delivery of customer service is	☐	☐	☐	☐	☐
5. Anticipation of emerging customers' needs is	☐	☐	☐	☐	☐
6. The rate of the customer's complaints handled is (e.g., processing time, efficiency and attitude)	☐	☐	☐	☐	☐

Q7. Activities to customer loyalty

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ⟷ Strongly Agree				
	1	2	3	4	5
1. Customers frequently visit your bank	☐	☐	☐	☐	☐
2. The diversity of products customers purchase with your bank is great	☐	☐	☐	☐	☐
3. The amount of money customers consume in your bank is high	☐	☐	☐	☐	☐
4. The period of time when customers frequently visit your bank is long	☐	☐	☐	☐	☐
5. The patronizing recency of customers (including Internet banking) with your bank is short	☐	☐	☐	☐	☐
6. The old customers recommend your bank to the new customers	☐	☐	☐	☐	☐
7. The retention rate for the old customers is high	☐	☐	☐	☐	☐

Q8. Activities to customer lifetime value

Here are some questions about your perceptions of your organization. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ⟷ Strongly Agree				
	1	2	3	4	5
1. Customers would not change their loyalty to your bank for several years in their lifetime	☐	☐	☐	☐	☐
2. Customers would keep doing business with your bank	☐	☐	☐	☐	☐
3. Compared with major competitors, your bank is the best one	☐	☐	☐	☐	☐
4. Customers are proud of being your bank's customers	☐	☐	☐	☐	☐
5. Customers would buy products and services of your bank, through its advertisement	☐	☐	☐	☐	☐
6. Customers would buy the new products and services of your bank due to the bank staffs' promotion	☐	☐	☐	☐	☐
7. I think advertisement has an important affect to the image building of our bank	☐	☐	☐	☐	☐
8. Customers would recommend your bank to their friends	☐	☐	☐	☐	☐
9. Customers are willing to share their experiences of doing business with your bank to others	☐	☐	☐	☐	☐
10. Compared with major competitors, it is worth to pay to your bank's products and services	☐	☐	☐	☐	☐
11. Customers are satisfied with the entire benefits provided by your bank	☐	☐	☐	☐	☐
12. The service provided by your bank is equal to the expense customers had paid	☐	☐	☐	☐	☐

Finally, on the last page there are some questions for classification purposes only. Please response to these questions by ticking (✓) in the boxes provided for each statement.

Q1: Your position: ……..

Q2: Is your seniority of employment?

☐ less than 5 ☐ 5 – less than 10 ☐ 10 – less than 15

☐ 15 – less than 20 ☐ 20 – less than 25 ☐ 25 or more

Thank you for participating in this survey. If you wish to receive the research results of this survey, please give us your name and address:

Name: …….

Address: …….

2. Questionnaire for managers (Chinese Version)

第一部分、顧客知識

本部份主要的目的為瞭解 **貴公司顧客知識建立的程度**，請就下列顧客知識評估項目，依據貴公司的現況，您的認可程度為何？ **(1 表示非常低，5 表示非常高)**

請在各項目最適當的□中打✓	非常低	稍為低	普通	稍為高	非常高
	1	2	3	4	5
『貴公司之顧客知識關於. .』					
1. 顧客往來產品數的建立程度	□	□	□	□	□
2. 顧客貢獻度的建立程度	□	□	□	□	□
3. 顧客消費型態的建立程度	□	□	□	□	□
4. 顧客消費頻率的建立程度	□	□	□	□	□
5. 顧客消費偏好的建立程度	□	□	□	□	□
『貴公司提供給顧客關於. .』					
6. 貴公司產品/服務知識的程度	□	□	□	□	□
7. 貴公司相關知識(例如公司簡介/背景、營收與獲利)的程度	□	□	□	□	□
『貴公司之顧客知識經由. .』					
8. 顧客抱怨所建立的程度	□	□	□	□	□
9. 顧客建議所建立的程度	□	□	□	□	□
10. 顧客要求所建立的程度	□	□	□	□	□

第二部分、顧客知識管理能力

本部份主要的目的為瞭解 **貴公司的顧客知識管理能力**，請就下列顧客知識管理能力評估項目，依據貴公司的現況，您的同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 貴公司之組織結構能夠促進不同部門之間知識的相互交流	□	□	□	□	□
2. 貴公司之組織結構能夠促進新知識之發現與創造	□	□	□	□	□
3. 貴公司之組織結構有利於團隊的合作	□	□	□	□	□
4. 貴公司員工利用 IT 與組織內、外之人員進行合作的程度高	□	□	□	□	□
5. 貴公司能夠利用 IT 尋找新的顧客知識	□	□	□	□	□
6. 貴公司能夠利用 IT 存取、使用與促進顧客知識的流通	□	□	□	□	□
7. 貴公司員工了解顧客知識對公司成功的重要性	□	□	□	□	□
8. 貴公司對於顧客知識的獲取與轉移的意願高	□	□	□	□	□
9. 貴公司鼓勵不同部門員工間之互動和討論	□	□	□	□	□
10. 貴公司高層主管支持知識管理活動	□	□	□	□	□
11. 貴公司提供合適的獎勵機制鼓勵內部員工進行知識分享	□	□	□	□	□

12. 貴公司獲取顧客知識的能力高	□	□	□	□	□
13. 貴公司獲取新產品/服務知識的能力高	□	□	□	□	□
14. 貴公司運用顧客知識於新產品/服務設計的能力高	□	□	□	□	□
15. 貴公司吸收個別顧客與企業夥伴知識的能力高	□	□	□	□	□
16. 貴公司移轉顧客知識至各別員工身上的能力高	□	□	□	□	□
17. 貴公司員工利用其工作與經驗的知識的能力高	□	□	□	□	□
18. 貴公司應用顧客知識在公司相關活動上(例如工作流程、新產品開發、新問題的解決與調整策略方向等)的能力高	□	□	□	□	□
19. 貴公司有能力保護知識免於不當使用	□	□	□	□	□
20. 貴公司訂定清楚的知識使用權限與規定	□	□	□	□	□

第三部分、顧客互動

本部份主要的目的為瞭解 **貴公司與顧客互動的程度**，請就下列顧客互動評估項目，依據貴公司的現況，您的同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 貴公司與顧客有持續的對話交流	□	□	□	□	□
2. 貴公司應用資訊科技來加強與顧客溝通的往來管道(例如網站 Web sites、客服中心 call center、email)	□	□	□	□	□
3. 貴公司會利用電話或其他的工具，以顧客的角色來測試與瞭解公司對顧客問題的反應	□	□	□	□	□
4. 貴公司維持追蹤並密切注意與顧客互動的紀錄	□	□	□	□	□
5. 貴公司會利用顧客來電當作一種銷售機會	□	□	□	□	□
6. 貴公司經常與主要競爭對手的顧客服務作比較	□	□	□	□	□
7. 貴公司經常提供顧客高附加價值的資訊	□	□	□	□	□

第四部分、客製化

本部份的主要目的為瞭解 **貴公司產品/服務的客製化程度**，請就下列客製化評估項目，依據貴公司的現況，您的同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5

1. 貴公司會主動瞭解顧客的需要	□	□	□	□	□
2. 貴公司會主動詢問顧客意見以改進公司的產品/服務	□	□	□	□	□
3. 貴公司會客製化相關的作業以節省顧客時間與公司支出	□	□	□	□	□
4. 貴公司會利用顧客知識來客製化公司產品/服務	□	□	□	□	□

第五部分、顧客價值

本部份的主要目的為瞭解 **貴公司相較於同業主要競爭者，在顧客價值的創造程度**，請就下列顧客價值評估項目，依據貴公司的現況，您的同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓ **『相較於同業主要競爭者. . 』**	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 貴公司提供高品質的服務	□	□	□	□	□
2. 貴公司一直維持高品質的服務	□	□	□	□	□
3. 貴公司的服務是值得信賴的	□	□	□	□	□
4. 貴公司員工相當尊重顧客	□	□	□	□	□
5. 貴公司的服務是值得的	□	□	□	□	□
6. 貴公司的服務符合顧客需要	□	□	□	□	□
7. 貴公司的服務具有好名聲	□	□	□	□	□

第六部分、顧客滿意度

本部份的主要目的為瞭解 **貴公司的顧客滿意度**，請就下列顧客滿意度評估項目，依據貴公司的現況，您認為其程度為何？ **(1 表示非常低，5 表示非常高)**

請在各項目最適當的□中打✓	非常低	稍為低	普通	稍為高	非常高
	1	2	3	4	5
1. 貴公司產品/服務的創新程度	□	□	□	□	□
2. 貴公司服務的便利程度	□	□	□	□	□
3. 貴公司員工的團隊精神	□	□	□	□	□
4. 貴公司能夠即時提供顧客服務的程度	□	□	□	□	□
5. 貴公司了解顧客需求的程度	□	□	□	□	□
6. 貴公司對顧客抱怨的處理程度(例如公司的處理速度、效率與態度)	□	□	□	□	□

第七部分、顧客忠誠度

本部份的主要目的為瞭解 **貴公司顧客的忠誠度**，請就下列顧客忠程度評估項目，依據貴公司的現況，您認為其程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 顧客光臨貴公司的平均頻率高	□	□	□	□	□
2. 顧客往來產品數多	□	□	□	□	□
3. 顧客往來平均金額高	□	□	□	□	□
4. 顧客與貴公司保持往來的期間長	□	□	□	□	□
5. 顧客最近一次光臨貴公司與上次光顧的時間間隔短(包括網路銀行)	□	□	□	□	□
6. 老顧客經常介紹新顧客與貴公司往來	□	□	□	□	□
7. 老顧客的顧客維持率高(指有實質交易或有效卡)	□	□	□	□	□

第八部分、顧客終身價值

本部份的主要目的為瞭解 **貴公司顧客的終身價值**，請就下列顧客終身價值評估項目，依據貴公司的現況，您同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 顧客對於貴公司的忠誠度將會持續多年不變	□	□	□	□	□
2. 顧客會維持與貴公司往來	□	□	□	□	□
3. 整體而言，相較於其他主要競爭者，貴公司是最好的一個	□	□	□	□	□
4. 身為貴公司之顧客，會有備受尊榮的感覺	□	□	□	□	□
5. 顧客會因為貴公司的媒體廣告影響而使用貴公司的產品/服務	□	□	□	□	□
6. 顧客會經由貴公司人員的推廣而使用貴公司的新產品/服務	□	□	□	□	□
7. 媒體廣告對於貴公司形象的建立有重要的影響	□	□	□	□	□
8. 顧客會將貴公司推薦給親朋好友	□	□	□	□	□
9. 顧客會樂意將與貴公司往來之經驗與人分享	□	□	□	□	□
10.相較於同業競爭者，與貴公司往來是值得的	□	□	□	□	□
11.貴公司所提供的產品/服務的滿足感是令顧客滿意的	□	□	□	□	□
12.顧客的付出成本與貴公司提供的服務是相符的	□	□	□	□	□

感謝您撥冗填答本問卷。最後麻煩您填答以下基本資料:

請問，您的職稱：_____

請問，您的工作年資：

☐ 5 年以下　☐ 5 - 10 年以下　☐ 10- 15 年以下
☐ 15 - 20 年以下　☐ 20 - 25 年以下　☐ 25 年以上

本問卷至此全部結束，麻煩您檢查是否有遺漏的地方，由衷感謝您大力的協助。請您將問卷放入信封後直接投入郵筒寄回(不必再貼郵票)即可。惟若您希望收到本研究之結果，請留下您的大名與地址，以利日後郵寄研究成果摘要給您。您對本問卷有任何問題或意見，請在空白處告訴我們，謝謝您的協助。並祝

萬事如意

姓名：_____
地址：_____
_____

3. Questionnaire for customers (English Version)

Q1. Activities to customer value

Here are some questions about your perceptions of this bank. Please rate how much you agree or disagree with each statement by ticking the box.

Statement	Strongly Disagree ← → Strongly Agree				
	1	2	3	4	5
Relative to other major banks,					
1. This bank delivers services of the highest quality	☐	☐	☐	☐	☐
2. This quality of this bank's service is consistently high	☐	☐	☐	☐	☐
3. This bank's service is very reliable	☐	☐	☐	☐	☐
4. This bank's staff treat customers with great respect	☐	☐	☐	☐	☐
5. The price of this bank's service is considered reasonable	☐	☐	☐	☐	☐
6. This bank's service fits customer's needs	☐	☐	☐	☐	☐
7. This bank's service is considered prestigious	☐	☐	☐	☐	☐

Q2. Activities to customer satisfaction

Here are some questions about your perceptions of this bank. Please rate how much you perceive with each statement by ticking the box.

Statement	Very Low ← → Very High				
	1	2	3	4	5
For this bank,					
1. Innovative products and services is	☐	☐	☐	☐	☐
2. Convenience to the customer is	☐	☐	☐	☐	☐
3. The employees' team spirit is	☐	☐	☐	☐	☐
4. On-time delivery of customer service is	☐	☐	☐	☐	☐
5. Anticipation of emerging customers' needs is	☐	☐	☐	☐	☐
6. The rate of customer's complaints handled is (e.g., processing time, efficiency and attitude)	☐	☐	☐	☐	☐

Q3. Activities to customer loyalty

Here are some questions about your perceptions of this bank. Please rate how much you agree or disagree with each statement by ticking in the box.

Statement	Strongly Disagree ← → Strongly Agree				
	1	2	3	4	5
1. I frequently visit this bank	☐	☐	☐	☐	☐
2. The diversity of products I purchase with this bank is great	☐	☐	☐	☐	☐
3. The amount of money I consume in this bank is high	☐	☐	☐	☐	☐
4. The period of time when I frequently visit your bank is long	☐	☐	☐	☐	☐
5. The period of time between the last two purchases by you with your bank is short	☐	☐	☐	☐	☐
6. I recommend this bank to my friends	☐	☐	☐	☐	☐

7. The retention rate for you is high	☐	☐	☐	☐	☐

Q4. Activities to customer lifetime value

Here are some questions about your perceptions of this bank. Please rate how much you agree or disagree with each statement by ticking in the box.

Statement	Strongly Disagree ← → Strongly Agree				
	1	2	3	4	5
1. I would not change the loyalty to this bank for several years in my lifetime	☐	☐	☐	☐	☐
2. I would keep doing business with this bank	☐	☐	☐	☐	☐
3. Compared with other banks I ever do business with, this bank is the best one	☐	☐	☐	☐	☐
4. I am proud of being this bank's customer	☐	☐	☐	☐	☐
5. I would buy the products and services of this bank, through its advertisement	☐	☐	☐	☐	☐
6. I would buy the new products and services of this bank due to this bank staffs' promotion	☐	☐	☐	☐	☐
7. I think advertisement has an important affect to the image building of this bank	☐	☐	☐	☐	☐
8. I would recommend this bank to my friends	☐	☐	☐	☐	☐
9. I am willing to share my experiences of doing business with this bank to others	☐	☐	☐	☐	☐
10. Compared with other banks I ever do business with, I think it is worth to pay to this bank's products and services	☐	☐	☐	☐	☐
11. It is satisfied with the entire benefits provided by this bank	☐	☐	☐	☐	☐
12. The service provided by this bank is equal to the expense you had paid	☐	☐	☐	☐	☐

Finally, on the last page there are some questions for classification purposes only. Please response to these questions by ticking in the boxes provided for each statement.

Q5. Are you? ☐ Male ☐ Female

Q6. To which of the following age groups do you belong?
- ☐ Below 25
- ☐ 25 - 34
- ☐ 35 – 44
- ☐ 45 – 54
- ☐ 55 – 64
- ☐ 65 +

Q7. What is your highest educational Qualification?
- ☐ Junior high school
- ☐ Senior high school
- ☐ Junior college
- ☐ University
- ☐ Graduate school +

Q8. Which of these industries would you Say you are mainly employed in? (Please tick one)

☐ Military, Government and Education
☐ General manufacturing industry
☐ Electronics industry
☐ Financial industry
☐ Retailing
☐ Agricultural industry
☐ Sport, Leisure, Tourism, and recreation
☐ Self employed

If other industry, please specify

……

Q9. Finally, which of the following categories represents your monthly salary?

☐ Below NT 20000
☐ NT 20001 - NT 30000
☐ NT 30001 - NT 40000
☐ NT 40001 - NT 50000
☐ NT 50001 - NT 60000
☐ NT 60001 - NT 70000
☐ NT 70000 +

4. Questionnaire for customers (Chinese Version)

第一部分、顧客價值

本部份的主要目的為瞭解 **玉山銀行相較於其他同業**，就下列顧客價值評估項目，依據該銀行的現況，您的同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓ **『相較於其他主要往來銀行. . 』**	非常不同意 1	稍為不同意 2	無意見 3	稍為同意 4	非常同意 5
1. 該銀行提供高品質的服務	□	□	□	□	□
2. 該銀行一直維持高品質的服務	□	□	□	□	□
3. 該銀行的服務是值得信賴的	□	□	□	□	□
4. 該銀行員工相當尊重顧客	□	□	□	□	□
5. 該銀行的服務是值得的	□	□	□	□	□
6. 該銀行的服務符合顧客需要	□	□	□	□	□
7. 該銀行的服務具有好名聲	□	□	□	□	□

第二部分、顧客滿意度

本部份的主要目的為瞭解 **玉山銀行的顧客滿意程度**，請就下列顧客滿意度評估項目，依據該銀行的現況，您認為其程度為何？ **(1 表示非常低，5 表示非常高)**

請在各項目最適當的□中打✓	非常低 1	稍為低 2	普通 3	稍為高 4	非常高 5
1. 該銀行產品/服務的創新程度	□	□	□	□	□
2. 該銀行服務的便利程度	□	□	□	□	□
3. 該銀行員工的團隊精神	□	□	□	□	□
4. 該銀行能夠即時提供顧客服務的程度	□	□	□	□	□
5. 該銀行了解顧客需求的程度	□	□	□	□	□
6. 該銀行對顧客抱怨的處理程度(例如銀行的處理速度、效率與態度)	□	□	□	□	□

第三部分、顧客忠誠度

本部份的主要目的為瞭解 **玉山銀行的顧客忠誠程度**，請就下列顧客忠程度評估項目，依據您個人的現況，您認為其程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 您光臨該銀行的平均頻率高	□	□	□	□	□
2. 您與該銀行的往來產品數多	□	□	□	□	□
3. 您與該銀行的平均往來金額高	□	□	□	□	□
4. 您與該銀行保持往來的期間長	□	□	□	□	□
5. 您最近一次光臨該銀行與上次光臨的時間間隔短(包括網路銀行)	□	□	□	□	□
6. 您經常介紹新顧客與該銀行往來	□	□	□	□	□
7. 您繼續成為該銀行顧客的程度高(指有實質交易或有效卡)	□	□	□	□	□

第四部分、顧客終身價值

本部份的主要目的為瞭解 **玉山銀行的顧客終身價值**，請就下列顧客終身價值評估項目，依據您個人的現況，您同意程度為何？ **(1 表示非常不同意，5 表示非常同意)**

請在各項目最適當的□中打✓	非常不同意	稍為不同意	無意見	稍為同意	非常同意
	1	2	3	4	5
1. 您對於該銀行的忠誠度將會持續多年不變	□	□	□	□	□
2. 您會維持與該銀行往來	□	□	□	□	□
3. 整體而言，相較於其他往來銀行，該銀行是最好的一個	□	□	□	□	□
4. 身為該銀行之顧客，您會覺得有備受尊榮的感覺	□	□	□	□	□
5. 您會因為該銀行的媒體廣告影響而採用該銀行的產品/服務	□	□	□	□	□
6. 您會經由銀行人員的推廣而採用該銀行的新產品/服務	□	□	□	□	□
7. 您認為媒體廣告對於該銀行形象的建立有重要的影響	□	□	□	□	□
8. 您會將該銀行推薦給親朋好友	□	□	□	□	□
9. 您會樂意將與該銀行往來之經驗與人分享	□	□	□	□	□
10. 相較於其他往來銀行，您覺得與該銀行往來是值得的	□	□	□	□	□
11. 該銀行所提供的產品/服務的滿足感是令您滿意的	□	□	□	□	□
12. 您覺得您的付出成本與該銀行提供的服務是相符的	□	□	□	□	□

感謝您撥冗填答本問卷。最後麻煩您填答基本資料:

1. 您的性別 □ 男 □ 女

2. 您的年齡 □ 25 歲以下

□ 25 – 34 歲
□ 35 – 44 歲
□ 45 – 54 歲
□ 55 – 64 歲
□ 65 歲以上

3. 您的最高學歷
□ 國中(含)以下
□ 高中(職)
□ 專科
□ 大學
□ 研究所以上

4. 您的職業
□ 軍公教
□ 一般製造業
□ 電子業
□ 金融業
□ 零售業
□ 農業
□ 休閒、娛樂
□ 自由業
□ 其他

5. 您的個人平均月收入
□ 20000 元(含)以下
□ 20001 - 30000 元
□ 30001 - 40000 元
□ 40001 - 50000 元
□ 50001 - 60000 元
□ 60001 - 70000 元
□ 70001 元以上

問卷結束，麻煩您檢查是否有遺漏的地方，衷心感謝您!

Appendix C

1. Banks Surveyed: Background Information

Bank name	Number of employees/ branches	Profit in NT$ Million (end of March 2012)	Company asset/deposits in NT$ Million (end of March 2012)	Honors/Awards	Business Overview
Yuanta Bank	**2500/82**	**555**	**521,631/443,016**	1. Best Investment Bank in Taiwan 2011 by FinanceAsia 2. Rated five prize for service among financial institutions in 2011 Golden Service Award by Commonwealth Magazine (2010) 3. First prize in Service Quality Award, Second prize in corporation governance Award, and Third prize in Perfo rmance Award by The Business Today Magazine (2010) 4. Best Corporate Image Award in Financial Service Survey by Management (2009)	Savings, loans, guarantees, foreign exchange, trusts, credit cards, securities, proprietary dealing in futures, derivatives, factoring, and e-banking
E. Sun Bank	**3800/121**	**2488**	**1,171,914/990,617**	1. "Golden Quality award" in Taiwan (2011) 2. Rated tops for service among financial institutions in 2011 Golden Service Award by Commonwealth Magazine (2011) 3. First prize in Most Trust-worthy Award (3 consecutive years), Best Teamwork of Financial Consultant and Best Performance Award by The Business Today Magazine (2011) 4. Platinum Award in 2010 Excellence Management in Corporate Governance in Asia by the Asset Magazine 5. First prize awards in Services Capital、Hospitality、Corporate Culture、and Customer Loyalty Award by China Productivity Centre (2011)	Savings, loans, guarantees, foreign exchange, trusts, credit cards, debentures, proprietary dealing in futures, derivatives, and e-banking
Chinatrust Bank	**8756/137**	**5950**	**1,880,896/1,452,025**	1. Trusted Brand: Gold Winner in Banking Industry & Credit Card issuing Bank by Reader's Digest (2011) 2. Best Corporate Image & Best Product Innovation Award – Financial Service Survey by Excellence Monthly (2011) 3. Best Brand in Banking Brands & Internet Banking Brands by Business Today (2011) 4. Best Private Bank service in Taiwan by Euromoney (2011) 5. Best Consumer Internet Bank in Taiwan by Global Finance (2011) 6. Best E-Commerce Bank in Taiwan/ Best Domestic Bank in Taiwan 7. The prestigious award "Top Ten Bank of 2010 in Taiwan" from among the top 300 Asian banks ranked by Yazhou Zhoukan (2011)	Savings, loans, guarantees, foreign exchange, offshore banking units (OBU), trusts, credit cards, cash cards, securities, debentures, proprietary dealing in futures, derivatives, factoring, safety deposit boxes, and e-banking and the Bank also serves as an agent for the lottery.
Cathay United Bank	**5982/161**	**3881**	**1,752,562/1,5191,53**	1. Overall best core banking implementation award (2011) 2. Rated tops for service among financial institutions in 2011 Golden Service Award by Vision Magazine (2011) 3. First prize in Most Trust-worthy Award, Best Financial Management Award by The Business Today Magazine (2009) 4. Third prize for service among financial institutions in 2009 Best Service Award by 1 Magazine	Savings accounts, loans, guarantees, foreign exchange, trusts, credit cards, cash cards, debentures, proprietary dealing in futures, derivatives, factoring, safety deposit boxes, and e-banking

Note: 1 GBP = 47 NT$

2. Listing of Overall Financial Holding Companies in Taiwanese

Company	Subsidiary	Tel. No. (+886=0)	Setup Date	Website
Hua Nan Financial Holdings Co. L.td.	**Hua Nan Commercial Bank,** Hua Nan Secutities, Hua Nan Investment Trust, Hua Nan Asset Management, Hua Nan Venture Capital	02-23713111	2001/12/19	http://www.hnfhc.com.tw
Hubon Financial Holdings Co. L.td.	**Taipei Fubon Commercial Bank,** Fubon Insurance, Fubon Securities, Fubon Asset Management, Fubon Securities Finance, Fubon Life Insurance	02-6636-6636	2001/12/19	http://www.fubon.com
China Development Financial Holdings Co. L.td.	**China Development Industrial Bank**, Grand Cathay Securities corporation	02-27638800	2001/12/28	http://www.cdibh.com
Cathay Financial Holdings Co. L.td.	**Cathay United Bank,** Cathay Securities, Cathay Century Insurance, Cathay Life, Cathay Venture Capital	02-27087698	2001/12/31	http://www.cathayholdings.com.tw
E. Sun Financial Holdings Co. L.td.	**E. Sun Bank,** E. Sun Securities, E. Sun Insurance Broker, E. Sun Venture Capital	02-21751313	2002/01/28	http://www.esunbank.com.tw
Yuanta Financial Holdings Co. L.td.	**Yuanta Commercial Bank**, Yuanta Securities, Yuanta Investment Teust, Yuanta Venture Capital, Yuanta Securities Finance	02-27811999	2002/02/04	http://www.yuanta.com
Mega Financial Holdings Co. L.td.	**Mega Bank,** Mega Securities, Mega Bills, Mega Asset Management, Mega Venture	02-23578888	2002/02/04	http://www.megaholdings.com.tw
Jih Son Financial Holdings Co. L.td.	**Jih Son Commercial Bank,** Jih Son Securities, Jih Son International Insurance Agency, Jih Son Future, Jih Son Investment Consulting	02-25673688	2002/02/05	http://www.jsun.com.tw/
Taishin Financial Holdings Co. L.td.	**Taishin International Bank,** Taishin Secutities, Taishin Venture Capital Investment, Taishin Securities Investment Trust, Taishin Asset Management	02-23268888	2002/02/18	http://www.taishinholdings.com.tw
Shin Kong Financial Holdings Co. L.td.	**Shin Kong Bank**, Shin Kong Securities, Shin Kong Insurance Brokers, Shin Kong Life Insurance, Shin Kong Venture Capital	02-23895858	2002/02/19	http://www.skfhc.com.tw
Waterland Financial Holdings Co. L.td.	**International Bills Finance**, Waterland Securities, Waterland Securities, Investment Consulting, Waterland Venture Capital	02-25154567	2002/03/26	http://www.waterland-fin.com.tw/
Sinopac Financial Holdings Co. L.td.	**Sinopac Commercial Bank**, Sinopac Secutities, Sinopac Management Consulting	02-81618888	2002/05/09	http://www.sinopac.com
Chinatrust Financial Holdings Co. L.td.	**Chinatrust Commercial Bank,** Chinatrust Secutities, Chinatrust Insurance Brokers, Chinatrust Asset Management, Chinatrust Venture Capital	02-2722202	2002/05/17	http://www.chinatrustgroup.com
First Financial Holdings Co. L.td.	**First Commercial Bank**, First Securities, First Bank Life Insurance, First Capital Management	02-23111111	2003/01/02	http://www.firstholding.com.tw
Taiwan Financial Holdings Co. L.td.	**Taiwan Bank**, BankTaiwan Securities, BankTaiwan Life Insurance	02-23493456	2008/01/01	http://www.twfhc.com.tw
Taiwan Cooperative Holdings Co. L.td.	**Taiwan Cooperative Bank**, Taiwan Cooperative Securities, Taiwan Cooperative Life Insurance, Taiwan Cooperative Securities Finance	02-23118811	2011/12/01	http://www.tcfhc.com.tw

Note: the bank is the major subsidiary for every Financial Holdings Co. L.td

Appendix C

3. **Survey respondents for bank manager: background information**

Eeplainatory note about, Business overview, These are areas of managerial responsibilities in the last column.
1) foreign exchange, 2) securities, 3) depository, 4) saving, 5) Taiwan lottery

Bank	Branch	Position	Year of working in the Bank	Tel. No. (+886=0)	Business overview
Yuanta Bank	Chengjhong Branch	Operation manager	15- less than 20	(02) 2382-2888	1,2,4
Yuanta Bank	Shihlin Branch	Operation manager	10- less than 15	(02) 2837-6638	1,2,4
Yuanta Bank	Sinyi Branch	Operation manager	10- less than 15	(02) 2703-2569	1,2,4
Yuanta Bank	Tianmu Branch	Assistant operation manager	5- less than 10	(02) 2871-2558	1,2,4
Yuanta Bank	Nanjing East Road Branch	Operation manager	15- less than 20	(02) 2545-8777	1,2,4
Yuanta Bank	Yuangi Branch	Operation manager	15- less than 20	(02) 2558-9222	1,2,4
Yuanta Bank	Daton Branch	Assistant operation manager	5- less than 10	(02) 2558-5869	1,2,4
Yuanta Bank	Chengde Branch	Senior manager	10- less than 15	(02) 2592-0000	1,2,4
Yuanta Bank	Jhongshanbeilu Branch	Operation manager	15- less than 20	(02) 2521-7888	1,2,4
Yuanta Bank	Taipei Branch	General manager	less than 5	(02) 2705-7888	1,2,4
Yuanta Bank	Jhongsiao Branch	Operation manager	15- less than 20	(02) 8786-7778	1,2,4
Yuanta Bank	Beisanchong Branch	Senior manager	15- less than 20	(02) 2982-9192	1,2,4
Yuanta Bank	Sindian Branch		10- less than 15	(02) 2912-5799	1,2,4
Yuanta Bank	Banciao Branch	Operation manager	20- less than 25	(02) 2953-6789	1,2,4
Yuanta Bank	Lujhou Branch	Operation manager	10- less than 15	(02) 2281-8958	1,2,4
Yuanta Bank	Guting Branch	Senior manager	10- less than 15	(02) 2365-4567	1,2,4
Yuanta Bank	Dunnan Branch	Operation manager	20- less than 25	(02) 2709-0636	1,2,4
Yuanta Bank	Jhonghe Branch	General manager	less than 5	(02) 2245-6789	1,2,4
Yuanta Bank	Sanchong Branch	Operation manager	20- less than 25	(02) 2983-2255	1,2,4
Yuanta Bank	Songshan Branch	Operation manager	10- less than 15	(02) 8785-7618	1,2,4
Yuanta Bank	Chungli Branch	Operation manager	10- less than 15	(03) 426-6007	1,2,4
Yuanta Bank	Taosin Branch	Operation manager	10- less than 15	(03) 338-5518	1,2,4
Yuanta Bank	Taoyuan Branch	Senior manager	10- less than 15	(03) 356-5000	1,2,4
Yuanta Bank	Hsinchu Branch	Assistant operation manager	10- less than 15	(03) 545-6688	1,2,4
Yuanta Bank	Datong Branch	General manager	5- less than 10	(03) 523-6600	1,2,4
Yuanta Bank	Jhubei Branch	Operation manager	15- less than 20	(03) 555-9199	1,2,4

Yuanta Bank	Hsinchu Science Park Branch	Senior manager	5- less than 10	(03) 666-7888	1,2,4
Yuanta Bank	Wunsin Branch	Senior manage	15- less than 20	(04) 2297-0068	1,2,4
Yuanta Bank	Fongyuan Branch	Operation manager	10- less than 15	(04) 2529-3366	1,2,4
Yuanta Bank	ChungGang Branch	Operation manager	20- less than 25	(04) 2465-0889	1,2,4
Yuanta Bank	Shalu Branch	Operation manager	15- less than 20	(04) 2665-6656	1,2,4
Yuanta Bank	Yuanlin Branch	Operation manager	10- less than 15	(04) 835-6403	1,2,4
Yuanta Bank	Dajia Branch	Operation manager	10- less than 15	(04) 2688-6088	1,2,4
Yuanta Bank	Beidou Branch	Operation manager	15- less than 20	(04) 887-3881	1,2,4
Yuanta Bank	Lugang Branch	Operation manager	15- less than 20	(04) 778-5799	1,2,4
Yuanta Bank	Changhua Branch	Senior manager	10- less than 15	(04) 726-7001	1,2,4
Yuanta Bank	Taichung Branch	Operation manager	15- less than 20	(04) 2227-1799	1,2,4
Yuanta Bank	ChongDe Branch	Operation manager	20- less than 25	(04) 2232-9961	1,2,4
Yuanta Bank	ChungGang Branch	Operation manager	15- less than 20	(04) 2465-0889	1,2,4
Yuanta Bank	Taiping Branch	Operation manager	20- less than 25	(04) 2270-2688	1,2,4
Yuanta Bank	Dali Branch	Operation manager	25over	(04) 2492-2288	1,2,4
Yuanta Bank	Dounan Branch	Operation manager	10- less than 15	(05) 597-1138	1,2,4
Yuanta Bank	Huwei Branch	Operation manager	10- less than 15	(05) 633-9169	1,2,4
Yuanta Bank	Chiayi Branch	Operation manager	10- less than 15	(05) 232-7469	1,2,4
Yuanta Bank	Tainan Branch	Operation manager	15- less than 20	(06) 293-8688	1,2,4
Yuanta Bank	Yongkang Branch	Operation manager	15- less than 20	(06) 312-6789	1,2,4
Yuanta Bank	Jiali Branch	Operation manager	20- less than 25	(06) 721-4888	1,2,4
Yuanta Bank	Fuchen Branch	Operation manager	15- less than 20	(06) 228-1281	1,2,4
Yuanta Bank	Fudong Branch	Senior manager	20- less than 25	(06) 268-7815	1,2,4
Yuanta Bank	Anhe Branch	Operation manager	10- less than 15	(06) 255-1236	1,2,4
Yuanta Bank	KaiYuan Branch		10- less than 15	(06) 238-3125	1,2,4
Yuanta Bank	Konsan Branch	Operation manager	10- less than 15	(07) 621-8955	1,2,4
Yuanta Bank	Fongshan Branch	Operation manager	15- less than 20	(07) 715-2700	1,2,4
Yuanta Bank	Kaohsiung Branch	Operation manager	25over	(07) 282-2101	1,2,4
E. Sun Bank	Nanching East Road Branch	Senior customer management manager	15- less than 20	(02)2760-1313	1,3,4

E. Sun Bank	Guting Branch	Senior customer management manager	10- less than 15	(02)2364-1313	1,2,3,4
E. Sun Bank	Chungshan Branch	Senior customer management manager	15- less than 20	(02)2537-1313	1,2,3,4
E. Sun Bank	Keelungroad Branch	Senior customer management manager	15- less than 20	(02)2378-1313	1,2,3,4
E. Sun Bank	Songshan Branch	Senior customer management manager	15- less than 20	(02)3765-1313	1,2,4
E. Sun Bank	Hsinyi Branch	Senior customer management manager	10- less than 15	(02)8789-1313	1,2,4
E. Sun Bank	Tienmu Branch	Senior customer management manager	10- less than 15	(02)2835-1313	1,2,3,4
E. Sun Bank	Daan Branch	Senior customer management manager	5- less than 10	(02)2755-1313	1,2,3,4
E. Sun Bank	Heping Branch	Senior customer management manager	5- less than 10	(02)2362-1313	1,4
E. Sun Bank	Neihu Branch	Senior customer management manager	10- less than 15	(02)2659-1313	1,2,3,4
E. Sun Bank	Mujha Branch	Customer management manager	15- less than 20	(02)2936-1313	3,4
E. Sun Bank	Jian Cheng Branch	Senior customer management manager	10- less than 15	(02)2556-1313	1,2,4
E. Sun Bank	Hsinchuang Branch	Senior customer management manager	15- less than 20	(02)2202-1313	1,4
E. Sun Bank	Shwangho Branch	Senior customer management manager	10- less than 15	(02)2923-1313	1,2,3,4
E. Sun Bank	Yonghe Branch	Senior customer management manager	15- less than 10	(02)2949-1313	1,4
E. Sun Bank	Yongan Branch	Customer management manager	less than 5	(02)8921-1313	1,4
E. Sun Bank	Jhonghe Branch	Customer management manager	5- less than 10	(02)2222-1313	1,4
E. Sun Bank	Chengtung Branch	Senior customer management manager	5- less than 10	(02)2504-1313	1,2,3,4
E. Sun Bank	Nanshijiao Branch	Customer management manager	5- less than 10	(02)2942-8813	1,4
E. Sun Bank	Banhsin Branch	Customer management manager	5- less than 10	(02)8952-1313	4

E. Sun Bank	Haishan Branch	Senior customer management manager	10- less than 15	(02)2256-1313	1,3,4
E. Sun Bank	Banciao Branch	Senior customer management manager	15- less than 20	(02)8257-1313	1,2,3,4
E. Sun Bank	Sanchung Branch	Senior customer management manager	15- less than 20	(02)2280-1313	1,2,3,4
E. Sun Bank	South Tucheng Branch	Senior customer management manager	10- less than 15	(02)2267-1313	1,2,3,4
E. Sun Bank	Sindian Branch	Senior customer management manager	5- less than 10	(02)2916-1313	1,4
E. Sun Bank	Lujhou Branch	Customer management manager	5- less than 10	(02)2848-1313	1,4
E. Sun Bank	Taishan Branch	Customer management manager	5- less than 10	(02)2297-1313	1,4
E. Sun Bank	Sijhih Branch	Customer management manager	10- less than 15	(02)2647-6613	1,3,4
E. Sun Bank	Chengjhong Branch	Senior customer management manager	5- less than 10	(02)2389-1313	1, 3, 4
E. Sun Bank	Changchun Branch	Customer management manager	5- less than 10	(02)2546-1313	1, 3, 4
E. Sun Bank	Mincyuan Branch	Customer management manager	5- less than 10	(02)2568-1313	1,3, 4
E. Sun Bank	Fuhsing Branch	Senior customer management manager	15- less than 20	(02)2771-1313	1, 4
E. Sun Bank	Sinhu Branch	Customer management manager	5- less than 10	(02)8791-6613	1, 2, 4
E. Sun Bank	Dong-Hu Branch	Senior customer management manager	15- less than 20	(02)2632-1313	1, 2, 3, 4
E. Sun Bank	Liancheng Branch	Senior customer management manager	15- less than 20	(02)8228-1313	1,2,4
E. Sun Bank	Pu Chain Branch	Senior customer management manager	15- less than 20	(02)2963-1313	1,2,4
E. Sun Bank	Tucheng Branch	Senior customer management manager	10- less than 15	(02)2274-1313	1,3,4
E. Sun Bank	Hueilong Branch	Senior customer management manager	5- less than 10	(02)2689-1313	1,2,3,4
E. Sun Bank	Sindian Branch	Senior customer management manager	10- less than 15	(02)2916-1313	1,4
E. Sun Bank	Lujhou Branch	Customer management manager	5- less than 10	(02)2848-1313	1,4

E. Sun Bank	Sijhih Branch	Customer management manager	less than 5	(02)2647-6613	1,2,4
E. Sun Bank	Taishan Branch	Customer management manager	5- less than 10	(02)2297-1313	1,4
E. Sun Bank	Beisin Branch	Senior customer management manager	10- less than 15	(02)8911-1313	1,2,3,4
E. Sun Bank	Taoyuan Branch	Senior customer management manager	10- less than 15	(03)332-1313	1, 2 ,4
E. Sun Bank	Tao Yin Branch	Senior customer management manager	10- less than 15	(03)375-1313	1, 2 ,4
E. Sun Bank	Linkou Branch	Senior customer management manager	10- less than 15	(03)396-1313	1, 2 ,3, 4
E. Sun Bank	Nankan Branch	Senior customer management manager	5- less than 10	(03)352-1313	1, 2 ,4
E. Sun Bank	Bade Branch	Customer management manager	5- less than 10	(03)367-1313	1, 4
E. Sun Bank	Jhongli Branch	Senior customer management manager	10- less than 15	(03)427-1313	1, 2 ,4
E. Sun Bank	Lisin Branch	Senior customer management manager	10- less than 15	(03)492-1313	1, 2,3, 4
E. Sun Bank	Hsinchu Branch	Senior customer management manager	5- less than 10	(03)523-1313	1, 2,3, 4
E. Sun Bank	Jhubei Branch	Customer management manager	5- less than 10	(03)554-1313	1, 2, 4
E. Sun Bank	Sinfong Branch	Senior customer management manager	10- less than 15	(03)557-1313	1, 2, 4
E. Sun Bank	Wunsin Branch	Customer management manager	less than 5	(04)2291-6613	1,2,4
E. Sun Bank	Dadun Branch	Senior customer management manager	10- less than 15	(04)2320-6613	1,2,4
E. Sun Bank	Situn Branch	Senior customer management manager	10- less than 15	(04)2461-6613	1,2,4
E. Sun Bank	Fongyuan Branch	Senior customer management manager	5- less than 10	(04)2512-6613	1,2,4
E. Sun Bank	Dali Branch	Senior customer management manager	10- less than 15	(04)2418-6613	1,2,3,4
E. Sun Bank	Daya Branch	Senior customer management manager	10- less than 15	(04)2568-6613	1,4

E. Sun Bank	Changhua Branch	Senior customer management manager	15- less than 20	(04)728-6613	1,2, 4
E. Sun Bank	Tainan Branch	Customer management manager	5- less than 10	(06)241-6613	1,2, 4
E. Sun Bank	East tainan Branch	Senior customer management manager	20- less than 25	(06)241-6613	1,3, 4
E. Sun Bank	Jin Hua Branch	Senior customer management manager	5- less than 10	(06)291-6613	1,2,3, 4
E. Sun Bank	Yungkang Branch	Senior customer management manager	10- less than 15	(06)201-6613	1,2,3, 4
E. Sun Bank	Kaohsiung Branch	Customer management manager	less than 5	(07)336-1313	1, 4
E. Sun Bank	Lingya Branch	Senior customer management manager	15- less than 20	(07)716-1313	1,2,3,4
E. Sun Bank	Cianjhen Branch	Senior customer management manager	5- less than 10	(07)761-1313	1,2,3,4
E. Sun Bank	North Kaohsiung Branch	Senior customer management manager	5- less than 10	(07)350-1313	1,2,3,4
E. Sun Bank	Sanmin Branch	Senior customer management manager	15- less than 20	(07)315-1313	1,4
Chinatrust Bank	Dongmen Branch	Head manager	10 - less than 15	(02)23958000	1,2,4,5
Chinatrust Bank	Jhancian Branch	Head manager		(02)23113598	1,2,4,5
Chinatrust Bank	Tianmu Branch	Head manager	10 - less than 15	(02)28322888	1,2,4,5
Chinatrust Bank	Sinyi Branch	Head manager	10 - less than 15	(02)27079977	1,2,4,5
Chinatrust Bank	Mujha Branch	Head manager	10 - less than 15	(02)29375890	1,2,4,5
Chinatrust Bank	Dazhi Branch	Head manager	20 - less than 25	(02)85026002	1,2,4,5
Chinatrust Bank	Jhongshan Branch	Head manager	10 - less than 15	(02)25235222	1,2,4,5
Chinatrust Bank	Longjiang Branch	Head manager	15 - less than 20	(02)25158811	1,2,4,5
Chinatrust Bank	Nanjing East Road Branch	Head manager	20 - less than 25	(02)25232238	1,2,4,5
Chinatrust Bank	Fubei Branch	Head manager	15 - less than 20	(02)87705566	1,2,4,5
Chinatrust Bank	Chengdong Branch	Head manager	20 - less than 25	(02)25677377	1,2,4,5
Chinatrust Bank	Minsheng Branch	Head manager	20 - less than 25	(02)25641818	1,2,4,5
Chinatrust Bank	Chengbei Branch	Senior manager	10 - less than 15	(02)25623789	1,2,4,5
Chinatrust Bank	Jhunglun Branch	Head manager	20 - less than 25	(02)27672669	1,2,4,5

Chinatrust Bank	Bansin Branch	Head manager	15 - less than 20	(02)89611500	1,2,4,5
Chinatrust Bank	Shuanghe Branch	Head manager	20 - less than 25	(02)29233333	1,2,4,5
Chinatrust Bank	Chongyang Branch	Head manager	20 - less than 25	(02)89881199	1,2,4,5
Chinatrust Bank	Neihu Branch	Head manager	15 - less than 20	(02)27938668	1,2,4,5
Chinatrust Bank	Chenggong Branch	Head manager	15 - less than 20	(02)87911686	1,2,4,5
Chinatrust Bank	Mujha Branch	Head manager	10 - less than 15	(02)29375890	1,2,4,5
Chinatrust Bank	Taoyuan Branch	Head manager	10 - less than 15	(03)3373266	1,2,4,5
Chinatrust Bank	South Taoyuan Branch	Head manager	15 - less than 20	(03)3388866	1,2,4,5
Chinatrust Bank	Jhongyuan Branch	Head manager	20 - less than 25	(03)4662211	1,2,4,5
Chinatrust Bank	Hsinchu Branch	Head manager	20 - less than 25	(03)5222687	1,2,4,5
Chinatrust Bank	Jhuke Branch	Head manager	15- less than 20	(03)5638080	1,2,4,5
Chinatrust Bank	Jhuke Branch	Head manager	10 - less than 15	(03)5357655	1,2,4,5
Chinatrust Bank	Jhupei Branch	Head manager	15 - less than 20	(03)6560222	1,2,4,5
Chinatrust Bank	Taichung Branch	Head manager	25 over	(04)22292161	1,2,4,5
Chinatrust Bank	Nantun Branch	Head manager	20 - less than 25	(04)24712268	1,2,4,5
Chinatrust Bank	Keboquan Branch	Head manager	15 - less than 20	(04)23101258	1,2,4,5
Chinatrust Bank	Chunqqang Branch	Head manager	15 - less than 20	(04)23149999	1,2,4,5
Chinatrust Bank	Gongvi Branch	Head manager	15- less than 20	(04)23291111	1,2,4,5
Chinatrust Bank	Fongyuan Branch	Head manager	25 over	(04)25201010	1,2,4,5
Chinatrust Bank	Changhua Branch	Head manager	25 over	(04)7279933	1,2,4,5
Chinatrust Bank	Dali Branch	Head manager	20 - less than 25	(04)2481333	1,2,4,5
Chinatrust Bank	Tainan Branch	Head manager	20 - less than 25	(06)2152345	1,2,4,5
Chinatrust Bank	Jhonghua Branch	Head manager	15 - less than 20	(06)3353535	1,2,4,5
Chinatrust Bank	South Taiwan Branch	Head manager	10 - less than 15	(06)2919999	1,2,4,5
Chinatrust Bank	West Taiwan Branch	Head manager	15 - less than 20	(06)2263636	1,2,4,5
Chinatrust Bank	Yongkang Branch	Head manager	10 - less than 15	(06)2025787	1,2,4,5
Chinatrust Bank	Kaohsiung Branch	Head manager	15 - less than 20	(07)2318141	1,2,4,5
Chinatrust Bank	Jiouru Branch	Head manager	10 - less than 15	(07)3805558	1,2,4,5
Chinatrust Bank	Sanmin Branch	Head manager	20 - less than 25	(07)3161155	1,2,4,5
Chinatrust Bank	Minzu Branch	Senior manager	15 - less than 20	(07)2386567	1,2,4,5
Chinatrust Bank	Jhongsiao Branch	Head manager	20 - less than 25	(07)27520310	1,2,4,5
Chinatrust Bank	Sinsing Branch	Head manager	10 - less than 15	(07)2262325	1,2,4,5

Cathay United Bank	Guanchian Branch	Sales manager	10- less than 15	(02)-23125555	1,2,4
Cathay United Bank	Nanking E. Road. Branch	Sales manager	15- less than 20	(02)-25061333	1,2,4
Cathay United Bank	Taipei Branch	General manager	5- less than 10	(02)-23319595	1,2,4
Cathay United Bank	Chungshiao Branch		15- less than 20	(02)-27721252	1,2,4
Cathay United Bank	Tienmou Branch	General manager	10- less than 15	(02)-28717040	1,2,4
Cathay United Bank	Hsinyi Branch	Sales manager	10- less than 15	(02)-27052316	1,2,4
Cathay United Bank	Kuangfu Branch	Sales manager	20- less than 25	(02)-27654222	1,2,4
Cathay United Bank	Fuhsin Branch	General manager	5- less than 10	(02)-27210306	1,2,4
Cathay United Bank	Minchuan Branch	Sales manager	25 over	(02)-25452155	1,2,4
Cathay United Bank	Daan Branch	Sales manager	15- less than 20	(02)-27771795	1,2,4
Cathay United Bank	Anho Branch	Sales manager	15- less than 20	(02)-23255007	1,2,4
Cathay United Bank	Sungjiang Branch	Sales manager	25 over	(02)-25639241	1,2,4
Cathay United Bank	Kuting Branch		10- less than 15	(02)-23632931	1,2,4
Cathay United Bank	Chienchen Branch	Sales manager	10- less than 15	(02)-25551688	1,2,4
Cathay United Bank	Tungmen Branch	Sales manager	10- less than 15	(02)-23943851	1,2,4
Cathay United Bank	Sungshan Branch	General manager	10- less than 15	(02)-27633310	1,2,4
Cathay United Bank	Pantung Branch	Sales manager	20- less than 25	(02)-89519355	1,2,4
Cathay United Bank	Tucheng Branch	Sales manager	10- less than 15	(02)-22739911	1,2,4
Cathay United Bank	Shiuefu Branch	Sales manager	20- less than 25	(02)-22668669	1,2,4
Cathay United Bank	Hsinshu Branch	Sales manager	25 over	(02)-22080077	1,2,4
Cathay United Bank	Shulin Branch	General manager	10- less than 15	(02)-26822988	1,2,4
Cathay United Bank	Sanchuang Branch	Sales manager	10- less than 15	(02)-29822101	1,2,4
Cathay United Bank	Erh Chung Branch	Sales manager	15- less than 20	(02)-22789999	1,2,4
Cathay United Bank	Chungshin Branch	Sales manager	10- less than 15	(02)-29723329	1,2,4
Cathay United Bank	Sijhih Branch	Sales manager	10- less than 15	(02)-26410666	1,2,4
Cathay United Bank	Fuhe Branch	Sales manager	10- less than 15	(02)-29241010	1,2,4
Cathay United Bank	Yongjhen Branch	General manager	5- less than 10	(02)-29273300	1,2,4
Cathay United Bank	Chungho Branch	Sales manager	15- less than 20	(02)-22422178	1,2,4
Cathay United Bank	Taoyuan Branch	Sales manager	10- less than 15	(03)-3359955	1,2,4
Cathay United Bank	Tongde Branch	Sales manager	10- less than 15	(03)-3250567	1,2,4
Cathay United Bank	Chungli Branch	Sales manager	20- less than 25	(03)-4224066	1,2,4

Cathay United Bank	HSIP Branch	Sales manager	15- less than 20	(03)-6661666	1,2,4
Cathay United Bank	Chuchen Branch	General manager	10- less than 15	(03)-5311122	1,2,4
Cathay United Bank	Chubei Branch	General manager	10- less than 15	(03)-657(03)36	1,2,4
Cathay United Bank	Taichung Branch	Sales manager	15- less than 20	(04)-22231031	1,2,4
Cathay United Bank	East Taichung Branch	Sales manager	10- less than 15	(04)-22831666	1,2,4
Cathay United Bank	Wuchuan Branch	Sales manager	20- less than 25	(04)-23014000	1,2,4
Cathay United Bank	Chungkang Branch	Sales manager	10- less than 15	(04)-23135678	1,2,4
Cathay United Bank	Wenshin Branch	Sales manager	15- less than 20	(04)-23813168	1,2,4
Cathay United Bank	Guoguang Branch	General manager	10- less than 15	(04)-22213801	1,2,4
Cathay United Bank	Jiansing Branch	Sales manager	20- less than 25	(04)-22050867	1,2,4
Cathay United Bank	Nantun Branch	Sales manager	20- less than 25	(04)-23716663	1,2,4
Cathay United Bank	Chongde Branch	Sales manager	20- less than 25	(04)-22389278	1,2,4
Cathay United Bank	Tanzih Mini-Branch	Sales manager	15- less than 20	(04)-25316666	1,2,4
Cathay United Bank	Dajia Branch	Sales manager	15- less than 20	(04)-26860779	1,2,4
Cathay United Bank	Changhwa Branch	Sales manager	15- less than 20	(04)-7289288	1,2,4
Cathay United Bank	Changsin Branch	Sales manager	20- less than 25	(04)-7257505	1,2,4
Cathay United Bank	Changmei Branch	General manager	10- less than 15	(04)-7253424	1,2,4
Cathay United Bank	Tainan Branch	Sales manager	15- less than 20	(06)-2280171	1,2,4
Cathay United Bank	Fengjia Branch	General manager	10- less than 15	(06)-2132111	1,2,4
Cathay United Bank	Linan Branch	Sales manager	15- less than 20	(06)-2581736	1,2,4
Cathay United Bank	Chengkung Branch	Sales manager	10- less than 15	(06)-3120266	1,2,4
Cathay United Bank	Kaohsiung Branch	Sales manager	20- less than 25	(07)-3237711	1,2,4
Cathay United Bank	Lingya Branch	Sales manager	20- less than 25	(07)-3338911	1,2,4
Cathay United Bank	Chianjin Branch	Sales manager	10- less than 15	(07)-2861720	1,2,4
Cathay United Bank	Hsinhsing Branch	General manager	10- less than 15	(07)-2274171	1,2,4
Cathay United Bank	Szewei Branch	Sales manager	15- less than 20	(07)-3319918	1,2,4

Appendix D

1. Measurement Model of Customer Knowledge

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
kac3	<---	kac	1.000				
kac4	<---	kac	1.015	.073	13.922	***	par_1
kac5	<---	kac	1.034	.076	13.607	***	par_2
kfc6	<---	kfc	1.000				
kfc7	<---	kfc	.746	.160	4.654	***	par_3
kbc8	<---	kbc	1.000				
kbc9	<---	kbc	1.118	.110	10.154	***	par_4
kbc10	<---	kbc	1.072	.108	9.909	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
kac3	<---	kac	**.814**
kac4	<---	kac	**.854**
kac5	<---	kac	**.842**
kfc6	<---	kfc	**.821**
kfc7	<---	kfc	**.578**
kbc8	<---	kbc	**.615**
kbc9	<---	kbc	**.925**
kbc10	<---	kbc	**.872**

Correlations: (Group number 1 - Default model)

			Estimate
kac	<-->	kfc	**.493**
kfc	<-->	kbc	**.331**
kac	<-->	kbc	**.370**
e4	<-->	e10	-.327
e7	<-->	e8	.179

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	21	**14.684**	**15**	**.474**	**.979**
Saturated model	36	.000	0		
Independence model	8	832.637	28	.000	29.737

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.019	**.984**	**.961**	.410
Saturated model	.000	1.000		
Independence model	.240	.482	.334	.375

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.982**	.967	1.000	**1.001**	**1.000**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.000**	.000	.062	.874
Independence model	.357	.337	.378	.000

2. Measurement Model of CKM Capability

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
kic2	<---	KIC	1.000				
kic3	<---	KIC	1.014	.079	12.918	***	par_1
kic6	<---	KIC	.974	.094	10.341	***	par_2
kic7	<---	KIC	.727	.083	8.772	***	par_3
kic8	<---	KIC	.845	.087	9.693	***	par_4
kic9	<---	KIC	1.084	.109	9.906	***	par_5
kic10	<---	KIC	.939	.092	10.247	***	par_6
kic11	<---	KIC	1.064	.116	9.160	***	par_7
kpc14	<---	KPC	1.000				
kpc15	<---	KPC	.988	.059	16.786	***	par_8
kpc16	<---	KPC	.990	.065	15.179	***	par_9
kpc17	<---	KPC	.833	.065	12.795	***	par_10

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
kic2	<---	KIC	**.704**
kic3	<---	KIC	**.669**
kic6	<---	KIC	**.749**
kic7	<---	KIC	**.634**
kic8	<---	KIC	**.695**
kic9	<---	KIC	**.721**
kic10	<---	KIC	**.741**
kic11	<---	KIC	**.661**
kpc14	<---	KPC	**.838**
kpc15	<---	KPC	**.888**
kpc16	<---	KPC	**.841**
kpc17	<---	KPC	**.752**

Correlations: (Group number 1 - Default model)

			Estimate
KIC	<-->	KPC	**.827**
e7	<-->	e8	.345
e2	<-->	e3	.487
e6	<-->	e9	-.122

			Estimate
e7	<-->	e9	.194
e3	<-->	e10	.164
e10	<-->	e14	-.214
e9	<-->	e14	-.198
e11	<-->	e17	.154

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	33	**70.941**	**45**	**.008**	**1.576**
Saturated model	78	.000	0		
Independence model	12	1679.898	66	.000	25.453

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.028	**.953**	**.918**	.550
Saturated model	.000	1.000		
Independence model	.338	.253	.117	.214

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.958**	.938	.984	**.976**	**.984**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.051**	.026	.072	.458
Independence model	.330	.316	.343	.000

3. Measurement Model of Customer Interaction

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
cui1 <--- CI	1.000				
cui2 <--- CI	.876	.080	10.941	***	par_1
cui3 <--- CI	1.068	.097	10.958	***	par_2
cui4 <--- CI	.910	.089	10.234	***	par_3
cui5 <--- CI	.870	.093	9.344	***	par_4
cui7 <--- CI	.942	.090	10.436	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
cui1 <--- CI	**.818**
cui2 <--- CI	**.717**
cui3 <--- CI	**.816**
cui4 <--- CI	**.693**
cui5 <--- CI	**.625**
cui7 <--- CI	**.703**

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	14	**3.926**	**7**	**.788**	**.561**
Saturated model	21	.000	0		
Independence model	6	579.990	15	.000	38.666

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.007	**.994**	**.983**	.331
Saturated model	.000	1.000		
Independence model	.236	.417	.184	.298

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.993**	.985	1.005	**1.012**	**1.000**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.000**	.000	.054	.938
Independence model	.409	.381	.438	.000

4. Measurement Model of Customisation

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
cus1 <--- CU	1.000				
cus2 <--- CU	1.077	.061	17.528	***	par_1
cus3 <--- CU	.916	.062	14.804	***	par_2
cus4 <--- CU	.868	.067	13.025	***	par_3

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
cus1 <--- CU	**.893**
cus2 <--- CU	**.899**
cus3 <--- CU	**.795**
cus4 <--- CU	**.735**

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	9	**.018**	**1**	**.894**	**.018**
Saturated model	10	.000	0		
Independence model	4	631.373	6	.000	105.229

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.000	**1.000**	**1.000**	.100
Saturated model	.000	1.000		
Independence model	.434	.392	-.013	.235

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**1.000**	1.000	1.002	**1.009**	**1.000**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.000**	.000	.082	.920
Independence model	.681	.636	.726	.

5. Measurement Model of Customer Value

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
qua1 <--- CVQ	1.000				
qua3 <--- CVQ	.848	.055	15.499	***	par_1
qua4 <--- CVQ	.693	.060	11.507	***	par_2

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
qua1 <--- CVQ	**.861**
qua3 <--- CVQ	**.856**
qua4 <--- CVQ	**.752**

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
CVP <--> CVQ	.370	.046	8.082	***	par_3
CVP <--> CVR	.365	.044	8.340	***	par_4
CVR <--> CVQ	.402	.046	8.780	***	par_5
e1 <--> e4	-.051	.016	-3.127	.002	par_6

Correlations: (Group number 1 - Default model)

	Estimate
CVP <--> CVQ	**.715**
CVP <--> CVR	**.669**
CVR <--> CVQ	**.826**
e1 <--> e4	-.306

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	12	**2.767**	**3**	**.429**	**.922**
Saturated model	15	.000	0		
Independence model	5	676.720	10	.000	67.672

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.005	**.995**	**.976**	.199
Saturated model	.000	1.000		
Independence model	.269	.376	.064	.251

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.996**	.986	1.000	**1.001**	**1.000**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.000**	.000	.109	.643
Independence model	.544	.510	.580	.000

6. Measurement Model of Customer Satisfaction

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
sat4 <--- CS	1.000				
sat5 <--- CS	1.081	.067	16.101	***	par_1
sat6 <--- CS	.824	.064	12.958	***	par_2
sat3 <--- CS	.940	.068	13.777	***	par_3
sat2 <--- CS	.990	.073	13.592	***	par_4
sat1 <--- CS	.984	.085	11.565	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
sat4 <--- CS	**.845**
sat5 <--- CS	**.863**
sat6 <--- CS	**.755**
sat3 <--- CS	**.787**
sat2 <--- CS	**.780**
sat1 <--- CS	**.700**

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	14	**7.178**	**7**	**.411**	**1.025**
Saturated model	21	.000	0		
Independence model	6	850.015	15	.000	56.668

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.008	**.990**	**.969**	.330
Saturated model	.000	1.000		
Independence model	.331	.336	.070	.240

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.992**	.982	1.000	**1.000**	**1.000**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.011**	.000	.083	.731
Independence model	.497	.469	.526	.000

7. Measurement Model of Customer Loyalty

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
beh1 <--- Beh	1.000				
beh2 <--- Beh	1.101	.133	8.290	***	par_1
beh3 <--- Beh	1.313	.165	7.966	***	par_2
beh4 <--- Beh	1.215	.142	8.527	***	par_3
beh5 <--- Beh	1.428	.163	8.772	***	par_4
beh6 <--- Beh	1.433	.151	9.459	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
beh1 <--- Beh	**.645**
beh2 <--- Beh	**.578**
beh3 <--- Beh	**.627**
beh4 <--- Beh	**.684**
beh5 <--- Beh	**.702**
beh6 <--- Beh	**.797**

Correlations: (Group number 1 - Default model)

	Estimate
Att <--> Beh	**.742**
e2 <--> e3	.396
e1 <--> e2	.211

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	16	**23.100**	**12**	**.027**	**1.925**
Saturated model	28	.000	0		
Independence model	7	655.462	21	.000	31.212

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.017	**.974**	**.938**	.417
Saturated model	.000	1.000		
Independence model	.231	.411	.215	.309

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.965**	.938	.983	**.969**	**.983**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.064**	.021	.103	.247
Independence model	.366	.343	.391	.000

8. Measurement Model of Customer Lifetime Value

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
usf1	<---	UF	1.000				
usf2	<---	UF	.884	.064	13.879	***	par_1
prm5	<---	PM	1.000				
prm6	<---	PM	.706	.061	11.545	***	par_2
prm7	<---	PM	.954	.082	11.591	***	par_3
opc10	<---	OC	1.000				
opc11	<---	OC	1.061	.061	17.432	***	par_4
opc12	<---	OC	.978	.075	12.993	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
usf1	<---	UF	**.853**
usf2	<---	UF	**.858**
prm5	<---	PM	**.812**
prm6	<---	PM	**.750**
prm7	<---	PM	**.763**
opc10	<---	OC	**.857**
opc11	<---	OC	**.889**
opc12	<---	OC	**.738**

Correlations: (Group number 1 - Default model)

			Estimate
UF	<-->	PM	**.643**
UF	<-->	OC	**.767**
PM	<-->	OC	**.810**
FI	<-->	UF	**.669**
FI	<-->	PM	**.534**
WM	<-->	PM	**.668**
WM	<-->	OC	**.792**
WM	<-->	UF	**.708**
FI	<-->	WM	.626
FI	<-->	OC	.727
e7	<-->	e11	-.267
e5	<-->	e10	-.198

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	30	**31.491**	**25**	**.173**	**1.260**
Saturated model	55	.000	0		
Independence model	10	1448.283	45	.000	32.184

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.017	**.972**	**.938**	.442
Saturated model	.000	1.000		
Independence model	.318	.265	.102	.217

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.978**	.961	.995	**.992**	**.995**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.034**	.000	.067	.758
Independence model	.372	.356	.389	

9. Original structural equation model specification and relevant hypotheses

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
CV	<--- CI	1.697	.374	4.534	***	par_24
CV	<--- CU	.641	.266	2.405	.016	par_26
CV	<--- CK	-.082	.161	-.508	.612	par_43
CV	<--- CKM	.009	.070	.126	.899	par_46
CS	<--- CKM	.022	.020	1.088	.277	par_25
CS	<--- CU	.226	.079	2.865	.004	par_27
CS	<--- CV	.216	.032	6.803	***	par_28
CS	<--- CK	.063	.046	1.376	.169	par_45
CS	<--- CI	-.088	.117	-.757	.449	par_47
CL	<--- CS	3.755	.566	6.639	***	par_29
CL	<--- CV	-.162	.170	-.953	.340	par_44
CLV	<--- CL	.437	.039	11.073	***	par_30
x1	<--- CK	1.000				
x2	<--- CK	.565	.096	5.905	***	par_1
x3	<--- CK	.836	.165	5.071	***	par_2
x4	<--- CKM	1.000				
x5	<--- CKM	.523	.036	14.599	***	par_3
x6	<--- CI	1.000				
x7	<--- CI	.926	.087	10.671	***	par_4
x8	<--- CI	1.073	.095	11.283	***	par_5
x9	<--- CI	1.056	.095	11.136	***	par_6
x10	<--- CI	.978	.101	9.655	***	par_7
x11	<--- CI	1.061	.097	10.998	***	par_8
x12	<--- CU	1.000				
x13	<--- CU	1.033	.055	18.793	***	par_9
x14	<--- CU	.918	.059	15.616	***	par_10
x15	<--- CU	.884	.063	13.941	***	par_11
y1	<--- CV	1.000				

			Estimate	S.E.	C.R.	P	Label
y2	<---	CV	.355	.025	14.336	***	par_12
y3	<---	CV	.367	.021	17.424	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.969	.070	13.750	***	par_14
y6	<---	CS	.943	.082	11.543	***	par_15
y7	<---	CS	.985	.080	12.232	***	par_16
y8	<---	CS	1.050	.085	12.348	***	par_17
y9	<---	CS	.811	.082	9.833	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.929	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.615	.051	12.123	***	par_20
y14	<---	CLV	1.275	.118	10.828	***	par_21
y15	<---	CLV	.581	.043	13.414	***	par_22
y16	<---	CLV	1.793	.124	14.513	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.530**
CV	<---	CU	**.297**
CV	<---	CK	**-.066**
CV	<---	CKM	**.024**
CS	<---	CKM	**.152**
CS	<---	CU	**.270**
CS	<---	CV	**.557**
CS	<---	CK	**.131**
CS	<---	CI	**-.071**
CL	<---	CS	**.978**
CL	<---	CV	**-.109**
CLV	<---	CL	**.989**
x1	<---	CK	.674
x2	<---	CK	.573
x3	<---	CK	.445
x4	<---	CKM	.876
x5	<---	CKM	.827
x6	<---	CI	.757
x7	<---	CI	.703
x8	<---	CI	.761
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.733
x12	<---	CU	.904
x13	<---	CU	.872
x14	<---	CU	.806
x15	<---	CU	.758
y1	<---	CV	.909
y2	<---	CV	.773
y3	<---	CV	.848

			Estimate
y4	<---	CS	.715
y5	<---	CS	.768
y6	<---	CS	.794
y7	<---	CS	.838
y8	<---	CS	.844
y9	<---	CS	.748
y10	<---	CL	.760
y11	<---	CL	.626
y12	<---	CLV	.769
y13	<---	CLV	.763
y14	<---	CLV	.697
y15	<---	CLV	.830
y16	<---	CLV	.895

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	86	**687.605**	**410**	**.000**	**1.677**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.136	**.836**	**.801**	.691
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.871**	.854	.944	**.935**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.055**	.048	.062	.131
Independence model	.216	.210	.221	

10. Structural equation model specification and relevant hypotheses (H2a Removed)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	1.715	.348	4.934	***	par_24
CV	<---	CU	.661	.213	3.098	.002	par_26
CV	<---	CK	-.067	.113	-.597	.551	par_42
CS	<---	CKM	.022	.020	1.117	.264	par_25
CS	<---	CU	.225	.079	2.857	.004	par_27

			Estimate	S.E.	C.R.	P	Label
CS	<---	CV	.216	.032	6.801	***	par_28
CS	<---	CK	.063	.046	1.373	.170	par_44
CS	<---	CI	-.089	.117	-.760	.447	par_45
CL	<---	CS	3.755	.566	6.640	***	par_29
CL	<---	CV	-.162	.170	-.953	.341	par_43
CLV	<---	CL	.437	.039	11.073	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.566	.096	5.924	***	par_1
x3	<---	CK	.836	.165	5.069	***	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.523	.036	14.622	***	par_3
x6	<---	CI	1.000				
x7	<---	CI	.926	.087	10.668	***	par_4
x8	<---	CI	1.073	.095	11.287	***	par_5
x9	<---	CI	1.056	.095	11.138	***	par_6
x10	<---	CI	.978	.101	9.655	***	par_7
x11	<---	CI	1.061	.097	10.996	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.033	.055	18.793	***	par_9
x14	<---	CU	.918	.059	15.617	***	par_10
x15	<---	CU	.884	.063	13.944	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.355	.025	14.339	***	par_12
y3	<---	CV	.367	.021	17.424	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.969	.070	13.750	***	par_14
y6	<---	CS	.943	.082	11.543	***	par_15
y7	<---	CS	.985	.081	12.232	***	par_16
y8	<---	CS	1.050	.085	12.348	***	par_17
y9	<---	CS	.811	.082	9.833	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.929	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.615	.051	12.123	***	par_20
y14	<---	CLV	1.275	.118	10.828	***	par_21
y15	<---	CLV	.581	.043	13.414	***	par_22
y16	<---	CLV	1.793	.124	14.513	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.536**
CV	<---	CU	**.306**
CV	<---	CK	**-.054**
CS	<---	CKM	**.155**
CS	<---	CU	**.269**
CS	<---	CV	**.557**
CS	<---	CK	**.130**
CS	<---	CI	**-.071**

			Estimate
CL	<---	CS	.978
CL	<---	CV	-.109
CLV	<---	CL	.989
x1	<---	CK	.674
x2	<---	CK	.574
x3	<---	CK	.445
x4	<---	CKM	.876
x5	<---	CKM	.827
x6	<---	CI	.757
x7	<---	CI	.703
x8	<---	CI	.761
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.733
x12	<---	CU	.904
x13	<---	CU	.872
x14	<---	CU	.806
x15	<---	CU	.758
y1	<---	CV	.909
y2	<---	CV	.774
y3	<---	CV	.848
y4	<---	CS	.715
y5	<---	CS	.768
y6	<---	CS	.794
y7	<---	CS	.838
y8	<---	CS	.844
y9	<---	CS	.747
y10	<---	CL	.759
y11	<---	CL	.626
y12	<---	CLV	.769
y13	<---	CLV	.763
y14	<---	CLV	.697
y15	<---	CLV	.830
y16	<---	CLV	.895

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	85	**687.621**	**411**	**.000**	**1.673**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.137	**.836**	**.802**	.693
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.871**	.854	.944	**.936**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.055**	.047	.062	.139
Independence model	.216	.210	.221	.000

11. Structural equation model specification and relevant hypotheses (H1a Removed)

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
CV	<--- CI	1.643	.323	5.083	***	par_24
CV	<--- CU	.631	.207	3.049	.002	par_26
CS	<--- CKM	.022	.020	1.120	.263	par_25
CS	<--- CU	.227	.079	2.893	.004	par_27
CS	<--- CV	.214	.031	6.864	***	par_28
CS	<--- CK	.060	.046	1.301	.193	par_43
CS	<--- CI	-.081	.115	-.705	.481	par_44
CL	<--- CS	3.734	.562	6.638	***	par_29
CL	<--- CV	-.154	.169	-.909	.363	par_42
CLV	<--- CL	.437	.039	11.071	***	par_30
x1	<--- CK	1.000				
x2	<--- CK	.573	.096	5.966	***	par_1
x3	<--- CK	.836	.166	5.051	***	par_2
x4	<--- CKM	1.000				
x5	<--- CKM	.523	.036	14.622	***	par_3
x6	<--- CI	1.000				
x7	<--- CI	.926	.087	10.666	***	par_4
x8	<--- CI	1.074	.095	11.296	***	par_5
x9	<--- CI	1.056	.095	11.138	***	par_6
x10	<--- CI	.978	.101	9.652	***	par_7
x11	<--- CI	1.062	.097	10.994	***	par_8
x12	<--- CU	1.000				
x13	<--- CU	1.033	.055	18.796	***	par_9
x14	<--- CU	.918	.059	15.616	***	par_10
x15	<--- CU	.884	.063	13.937	***	par_11
y1	<--- CV	1.000				
y2	<--- CV	.355	.025	14.338	***	par_12
y3	<--- CV	.366	.021	17.425	***	par_13
y4	<--- CS	1.000				
y5	<--- CS	.969	.070	13.750	***	par_14
y6	<--- CS	.943	.082	11.545	***	par_15
y7	<--- CS	.985	.080	12.235	***	par_16
y8	<--- CS	1.050	.085	12.352	***	par_17
y9	<--- CS	.811	.082	9.834	***	par_18

			Estimate	S.E.	C.R.	P	Label
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.928	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.615	.051	12.125	***	par_20
y14	<---	CLV	1.275	.118	10.828	***	par_21
y15	<---	CLV	.581	.043	13.414	***	par_22
y16	<---	CLV	1.793	.124	14.513	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.513**
CV	<---	CU	**.292**
CS	<---	CKM	**.155**
CS	<---	CU	**.271**
CS	<---	CV	**.550**
CS	<---	CK	**.123**
CS	<---	CI	**-.065**
CL	<---	CS	**.974**
CL	<---	CV	**-.103**
CLV	<---	CL	**.989**
x1	<---	CK	.670
x2	<---	CK	.578
x3	<---	CK	.443
x4	<---	CKM	.876
x5	<---	CKM	.827
x6	<---	CI	.757
x7	<---	CI	.703
x8	<---	CI	.762
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.733
x12	<---	CU	.904
x13	<---	CU	.873
x14	<---	CU	.806
x15	<---	CU	.757
y1	<---	CV	.909
y2	<---	CV	.774
y3	<---	CV	.848
y4	<---	CS	.716
y5	<---	CS	.769
y6	<---	CS	.794
y7	<---	CS	.838
y8	<---	CS	.845
y9	<---	CS	.748
y10	<---	CL	.760
y11	<---	CL	.626
y12	<---	CLV	.769
y13	<---	CLV	.763

			Estimate
y14	<---	CLV	.697
y15	<---	CLV	.831
y16	<---	CLV	.895

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	84	**687.977**	**412**	**.000**	**1.670**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.134	**.836**	**.802**	.694
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.871**	.854	.944	**.936**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.055**	.047	.062	.146
Independence model	.216	.210	.221	.

12. Structural equation model specification and relevant hypotheses (H3b Removed)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	1.622	.321	5.045	***	par_24
CV	<---	CU	.647	.205	3.149	.002	par_26
CS	<---	CKM	.017	.019	.927	.354	par_25
CS	<---	CU	.222	.078	2.846	.004	par_27
CS	<---	CV	.204	.027	7.460	***	par_28
CS	<---	CK	.061	.046	1.316	.188	par_43
CL	<---	CS	3.710	.556	6.672	***	par_29
CL	<---	CV	-.143	.166	-.860	.390	par_42
CLV	<---	CL	.437	.039	11.068	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.573	.096	5.960	***	par_1
x3	<---	CK	.834	.165	5.043	***	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.523	.036	14.608	***	par_3
x6	<---	CI	1.000				

			Estimate	S.E.	C.R.	P	Label
x7	<---	CI	.927	.087	10.657	***	par_4
x8	<---	CI	1.075	.095	11.283	***	par_5
x9	<---	CI	1.058	.095	11.132	***	par_6
x10	<---	CI	.978	.101	9.635	***	par_7
x11	<---	CI	1.064	.097	10.999	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.033	.055	18.801	***	par_9
x14	<---	CU	.918	.059	15.614	***	par_10
x15	<---	CU	.884	.063	13.934	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.354	.025	14.325	***	par_12
y3	<---	CV	.366	.021	17.428	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.969	.071	13.744	***	par_14
y6	<---	CS	.943	.082	11.539	***	par_15
y7	<---	CS	.985	.081	12.233	***	par_16
y8	<---	CS	1.052	.085	12.355	***	par_17
y9	<---	CS	.811	.083	9.834	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.926	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.615	.051	12.129	***	par_20
y14	<---	CLV	1.275	.118	10.828	***	par_21
y15	<---	CLV	.581	.043	13.415	***	par_22
y16	<---	CLV	1.792	.123	14.516	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.505**
CV	<---	CU	**.299**
CS	<---	CKM	**.121**
CS	<---	CU	**.265**
CS	<---	CV	**.526**
CS	<---	CK	**.125**
CL	<---	CS	**.967**
CL	<---	CV	**-.096**
CLV	<---	CL	**.989**
x1	<---	CK	.671
x2	<---	CK	.578
x3	<---	CK	.442
x4	<---	CKM	.876
x5	<---	CKM	.828
x6	<---	CI	.756
x7	<---	CI	.703
x8	<---	CI	.761
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.734

			Estimate
x12	<---	CU	.904
x13	<---	CU	.873
x14	<---	CU	.806
x15	<---	CU	.757
y1	<---	CV	.911
y2	<---	CV	.773
y3	<---	CV	.848
y4	<---	CS	.715
y5	<---	CS	.769
y6	<---	CS	.794
y7	<---	CS	.838
y8	<---	CS	.845
y9	<---	CS	.748
y10	<---	CL	.760
y11	<---	CL	.626
y12	<---	CLV	.769
y13	<---	CLV	.763
y14	<---	CLV	.697
y15	<---	CLV	.830
y16	<---	CLV	

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	83	**688.478**	**413**	**.000**	**1.667**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.136	**.836**	**.802**	.696
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.871**	.855	.944	**.936**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.054**	.047	.062	.152
Independence model	.216	.210	.221	

13. Structural equation model specification and relevant hypotheses (H6 Removed)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	1.619	.321	5.043	***	par_24
CV	<---	CU	.653	.205	3.183	.001	par_26
CS	<---	CKM	.018	.019	.958	.338	par_25
CS	<---	CU	.226	.080	2.827	.005	par_27
CS	<---	CV	.200	.027	7.354	***	par_28
CS	<---	CK	.057	.047	1.213	.225	par_42
CL	<---	CS	3.355	.343	9.780	***	par_29
CLV	<---	CL	.440	.040	11.067	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.575	.097	5.953	***	par_1
x3	<---	CK	.837	.166	5.038	***	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.523	.036	14.602	***	par_3
x6	<---	CI	1.000				
x7	<---	CI	.927	.087	10.659	***	par_4
x8	<---	CI	1.075	.095	11.285	***	par_5
x9	<---	CI	1.057	.095	11.132	***	par_6
x10	<---	CI	.978	.101	9.636	***	par_7
x11	<---	CI	1.064	.097	11.000	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.033	.055	18.801	***	par_9
x14	<---	CU	.918	.059	15.614	***	par_10
x15	<---	CU	.883	.063	13.932	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.355	.025	14.326	***	par_12
y3	<---	CV	.366	.021	17.421	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.969	.070	13.760	***	par_14
y6	<---	CS	.940	.081	11.570	***	par_15
y7	<---	CS	.984	.080	12.281	***	par_16
y8	<---	CS	1.052	.085	12.418	***	par_17
y9	<---	CS	.810	.082	9.853	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.921	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.616	.051	12.158	***	par_20
y14	<---	CLV	1.273	.118	10.824	***	par_21
y15	<---	CLV	.581	.043	13.416	***	par_22
y16	<---	CLV	1.791	.123	14.520	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.504**
CV	<---	CU	**.302**
CS	<---	CKM	**.127**
CS	<---	CU	**.269**

			Estimate
CS	<---	CV	**.514**
CS	<---	CK	**.117**
CL	<---	CS	**.879**
CLV	<---	CL	**.992**
x1	<---	CK	.669
x2	<---	CK	.579
x3	<---	CK	.442
x4	<---	CKM	.876
x5	<---	CKM	.827
x6	<---	CI	.756
x7	<---	CI	.703
x8	<---	CI	.761
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.734
x12	<---	CU	.904
x13	<---	CU	.873
x14	<---	CU	.806
x15	<---	CU	.757
y1	<---	CV	.911
y2	<---	CV	.773
y3	<---	CV	.848
y4	<---	CS	.718
y5	<---	CS	.771
y6	<---	CS	.794
y7	<---	CS	.840
y8	<---	CS	.848
y9	<---	CS	.749
y10	<---	CL	.757
y11	<---	CL	.625
y12	<---	CLV	.770
y13	<---	CLV	.764
y14	<---	CLV	.697
y15	<---	CLV	.830
y16	<---	CLV	.895

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	82	**689.267**	**414**	**.000**	**1.665**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.142	**.835**	**.802**	.697
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.871**	.855	.944	**.936**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.054**	.047	.061	.

14. Final Structural equation model specification and relevant hypotheses (H1b Removed)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	1.617	.321	5.042	***	par_24
CV	<---	CU	.654	.205	3.190	.001	par_26
CS	<---	CKM	.036	.013	2.758	.006	par_25
CS	<---	CU	.198	.077	2.558	.011	par_27
CS	<---	CV	.199	.027	7.305	***	par_28
CL	<---	CS	3.346	.343	9.757	***	par_29
CLV	<---	CL	.440	.040	11.049	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.598	.099	6.047	***	par_1
x3	<---	CK	.854	.170	5.040	***	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.523	.036	14.653	***	par_3
x6	<---	CI	1.000				
x7	<---	CI	.928	.087	10.670	***	par_4
x8	<---	CI	1.077	.095	11.302	***	par_5
x9	<---	CI	1.057	.095	11.131	***	par_6
x10	<---	CI	.978	.101	9.639	***	par_7
x11	<---	CI	1.063	.097	11.004	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.033	.055	18.803	***	par_9
x14	<---	CU	.917	.059	15.609	***	par_10
x15	<---	CU	.883	.063	13.934	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.355	.025	14.320	***	par_12
y3	<---	CV	.365	.021	17.409	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.969	.070	13.757	***	par_14
y6	<---	CS	.940	.081	11.569	***	par_15
y7	<---	CS	.985	.080	12.286	***	par_16
y8	<---	CS	1.053	.085	12.433	***	par_17
y9	<---	CS	.810	.082	9.852	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.206	.017	11.920	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.616	.051	12.154	***	par_20

			Estimate	S.E.	C.R.	P	Label
y14	<---	CLV	1.273	.118	10.821	***	par_21
y15	<---	CLV	.581	.043	13.417	***	par_22
y16	<---	CLV	1.791	.123	14.519	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.504**
CV	<---	CU	**.303**
CS	<---	CKM	**.249**
CS	<---	CU	**.236**
CS	<---	CV	**.511**
CL	<---	CS	**.878**
CLV	<---	CL	**.992**
x1	<---	CK	.657
x2	<---	CK	.591
x3	<---	CK	.444
x4	<---	CKM	.875
x5	<---	CKM	.826
x6	<---	CI	.756
x7	<---	CI	.703
x8	<---	CI	.762
x9	<---	CI	.744
x10	<---	CI	.649
x11	<---	CI	.734
x12	<---	CU	.904
x13	<---	CU	.873
x14	<---	CU	.806
x15	<---	CU	.757
y1	<---	CV	.911
y2	<---	CV	.774
y3	<---	CV	.847
y4	<---	CS	.718
y5	<---	CS	.770
y6	<---	CS	.794
y7	<---	CS	.840
y8	<---	CS	.849
y9	<---	CS	.749
y10	<---	CL	.757
y11	<---	CL	.625
y12	<---	CLV	.770
y13	<---	CLV	.764
y14	<---	CLV	.696
y15	<---	CLV	.830
y16	<---	CLV	.895

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	81	**690.725**	**415**	**.000**	**1.664**
Saturated model	496	.000	0		
Independence model	31	5328.905	465	.000	11.460

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.147	**.835**	**.803**	.699
Saturated model	.000	1.000		
Independence model	1.220	.133	.075	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.870**	.855	.944	**.936**	**.943**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.054**	.047	.061	.157
Independence model	.216	.210	.221	

15. Structural equation model specification and relevant hypotheses from the bank perspective

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	1.665	.463	3.594	***	par_24
CV	<---	CU	.702	.272	2.582	.010	par_26
CS	<---	CKM	.046	.024	1.958	.050	par_25
CS	<---	CU	.143	.120	1.194	.233	par_27
CS	<---	CV	.155	.035	4.423	***	par_28
CL	<---	CS	3.463	.479	7.229	***	par_29
CLV	<---	CL	.516	.058	8.889	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.863	.235	3.677	***	par_1
x3	<---	CK	1.226	.389	3.151	.002	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.505	.050	10.156	***	par_3
x6	<---	CI	1.000				
x7	<---	CI	.993	.127	7.790	***	par_4
x8	<---	CI	1.140	.154	7.420	***	par_5
x9	<---	CI	1.132	.149	7.618	***	par_6
x10	<---	CI	1.044	.161	6.492	***	par_7
x11	<---	CI	1.113	.146	7.624	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.100	.076	14.543	***	par_9

			Estimate	S.E.	C.R.	P	Label
x14	<---	CU	.969	.080	12.169	***	par_10
x15	<---	CU	.915	.088	10.428	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.333	.034	9.717	***	par_12
y3	<---	CV	.373	.030	12.314	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	.988	.113	8.750	***	par_14
y6	<---	CS	.984	.123	7.969	***	par_15
y7	<---	CS	1.060	.121	8.792	***	par_16
y8	<---	CS	1.261	.138	9.125	***	par_17
y9	<---	CS	.822	.115	7.134	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.222	.024	9.097	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.571	.065	8.740	***	par_20
y14	<---	CLV	1.135	.148	7.693	***	par_21
y15	<---	CLV	.535	.053	10.172	***	par_22
y16	<---	CLV	1.740	.154	11.302	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.487**
CV	<---	CU	**.329**
CS	<---	CKM	**.347**
CS	<---	CU	**.189**
CS	<---	CV	**.439**
CL	<---	CS	**.895**
CLV	<---	CL	**1.007**
x1	<---	CK	.519
x2	<---	CK	.635
x3	<---	CK	.455
x4	<---	CKM	.865
x5	<---	CKM	.784
x6	<---	CI	.732
x7	<---	CI	.718
x8	<---	CI	.711
x9	<---	CI	.723
x10	<---	CI	.618
x11	<---	CI	.711
x12	<---	CU	.897
x13	<---	CU	.890
x14	<---	CU	.833
x15	<---	CU	.769
y1	<---	CV	.917
y2	<---	CV	.749
y3	<---	CV	.826
y4	<---	CS	.699
y5	<---	CS	.760

			Estimate
y6	<---	CS	.765
y7	<---	CS	.846
y8	<---	CS	.872
y9	<---	CS	.724
y10	<---	CL	.768
y11	<---	CL	.605
y12	<---	CLV	.809
y13	<---	CLV	.720
y14	<---	CLV	.653
y15	<---	CLV	.805
y16	<---	CLV	.873

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	81	**692.546**	**415**	**.000**	**1.669**
Saturated model	496	.000	0		
Independence model	31	3147.582	465	.000	6.769

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.182	**.739**	**.688**	.618
Saturated model	.000	1.000		
Independence model	1.258	.132	.074	.124

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.780**	.753	.898	**.884**	**.897**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.074**	.064	.084	.000
Independence model	.217	.210	.225	.000

16. Structural equation model specification and relevant hypotheses from the customer perspective

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CV	<---	CI	.791	.622	1.272	.204	par_24
CV	<---	CU	.125	.377	.332	.740	par_26
CS	<---	CKM	.010	.012	.817	.414	par_25
CS	<---	CU	-.031	.065	-.476	.634	par_27
CS	<---	CV	.192	.016	11.806	***	par_28
CL	<---	CS	6.690	.649	10.309	***	par_29
CLV	<---	CL	.381	.025	15.076	***	par_30
x1	<---	CK	1.000				
x2	<---	CK	.884	.238	3.708	***	par_1
x3	<---	CK	1.283	.402	3.191	.001	par_2
x4	<---	CKM	1.000				
x5	<---	CKM	.508	.051	10.037	***	par_3
x6	<---	CI	1.000				
x7	<---	CI	1.015	.127	7.996	***	par_4
x8	<---	CI	1.115	.153	7.276	***	par_5
x9	<---	CI	1.125	.149	7.565	***	par_6
x10	<---	CI	1.030	.161	6.408	***	par_7
x11	<---	CI	1.105	.145	7.596	***	par_8
x12	<---	CU	1.000				
x13	<---	CU	1.106	.076	14.544	***	par_9
x14	<---	CU	.972	.080	12.122	***	par_10
x15	<---	CU	.908	.089	10.258	***	par_11
y1	<---	CV	1.000				
y2	<---	CV	.308	.013	22.918	***	par_12
y3	<---	CV	.363	.011	31.859	***	par_13
y4	<---	CS	1.000				
y5	<---	CS	1.159	.084	13.844	***	par_14
y6	<---	CS	1.413	.108	13.145	***	par_15
y7	<---	CS	1.376	.103	13.406	***	par_16
y8	<---	CS	1.361	.101	13.469	***	par_17
y9	<---	CS	1.462	.122	11.978	***	par_18
y10	<---	CL	1.000				
y11	<---	CL	.154	.010	15.165	***	par_19
y12	<---	CLV	1.000				
y13	<---	CLV	.553	.030	18.726	***	par_20
y14	<---	CLV	1.371	.078	17.673	***	par_21
y15	<---	CLV	.548	.029	18.946	***	par_22
y16	<---	CLV	1.637	.074	22.274	***	par_23

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CV	<---	CI	**.212**
CV	<---	CU	**.053**
CS	<---	CKM	**.107**
CS	<---	CU	**-.061**
CS	<---	CV	**.889**

			Estimate
CL	<---	CS	**.927**
CLV	<---	CL	**1.017**
x1	<---	CK	.509
x2	<---	CK	.638
x3	<---	CK	.467
x4	<---	CKM	.857
x5	<---	CKM	.782
x6	<---	CI	.735
x7	<---	CI	.736
x8	<---	CI	.698
x9	<---	CI	.720
x10	<---	CI	.612
x11	<---	CI	.709
x12	<---	CU	.896
x13	<---	CU	.894
x14	<---	CU	.835
x15	<---	CU	.762
y1	<---	CV	.986
y2	<---	CV	.916
y3	<---	CV	.961
y4	<---	CS	.802
y5	<---	CS	.863
y6	<---	CS	.944
y7	<---	CS	.953
y8	<---	CS	.953
y9	<---	CS	.926
y10	<---	CL	.866
y11	<---	CL	.737
y12	<---	CLV	.928
y13	<---	CLV	.922
y14	<---	CLV	.906
y15	<---	CLV	.926
y16	<---	CLV	.965

Model Fit Summary

CMIN

Model	NPAR	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	81	**622.909**	**415**	**.000**	**1.501**
Saturated model	496	.000	0		
Independence model	31	4595.802	465	.000	9.883

RMR, GFI

Model	RMR	**GFI**	**AGFI**	PGFI
Default model	.166	**.765**	**.719**	.640
Saturated model	.000	1.000		
Independence model	.964	.130	.072	.122

Baseline Comparisons

Model	**NFI** Delta1	RFI rho1	IFI Delta2	**TLI** rho2	**CFI**
Default model	**.864**	.848	.950	**.944**	**.950**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.064**	.053	.074	.016
Independence model	.270	.263	.277	